UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE
Geneva, Switzerland

DISCUSSION PAPER SERIES No. 2005.5

December 2005

THE PRIVATE HOUSING MARKET IN EASTERN EUROPE AND THE CIS

- Jose Palacin

  and

- Robert C. Shelburne

UNITED NATIONS

The UNECE series of Discussion Papers is intended to make available to a wider audience papers on matters of topical interest that have been prepared by the staff of the secretariat or commissioned by the secretariat from external experts. The purpose of the Discussion Papers is to contribute to the analysis and discussion of economic developments and policies in the ECE region. The views expressed are those of the authors and do not necessarily reflect those of the secretariat or of the member governments of UNECE.

I. Introduction*

This study provides a broad overview of the private housing market in central and eastern Europe and some of the CIS[1] – its history, current conditions and implications for the overall economy. It highlights regional differences, describes the different policy choices that have been made, and evaluates potential problem areas and the policy options for addressing them. The paper begins with a description of housing in these countries before and during their transition phase to market economies. The current state of the housing market in this region is then examined with an emphasis on its institutional development and size. A major objective is to ascertain the extent to which these markets are now similar to those observed in more developed western economies. For the observed differences, an attempt is made to determine to what extent these are due to their being emerging markets or to their socialist past and the complications that arose from the economic crisis that accompanied their transition to market economies. The implications for the housing market resulting from the further integration of these countries into the global financial system are also explored.

This study examines in some detail the current institutional development of the housing sector in these regions. More specifically, the role of mortgage financing is analysed, paying due attention to some of the most obvious risks that it may pose for the banking system. Particular attention is directed towards understanding the impact of housing market trends and existing financing schemes on the financial position of households as well as their macroeconomic implications for the countries concerned. Financing features, including the relative importance of fixed versus variable interest rates, exposure to exchange rate risks and the development of secondary mortgage markets, are investigated. The management of emerging risks associated with the development of financing schemes for housing is also briefly considered.

Methodological issues regarding the collection and use of housing price statistics are discussed, including the rather limited availability of data for the region. Price trends throughout the region are analysed; an attempt is made to determine if these price trends reflect changes in fundamentals and are basically sound, or if there is evidence of overvaluation as is often believed to be the case in many of the advanced economies of western Europe, north America and Australia. A more detailed analysis of pricing trends within countries is provided for a selected number of countries. Throughout the discussion, policy-relevant issues are highlighted, their interconnects and implications described and different country experiences in addressing them are evaluated. This study focuses on the housing market for private residences and its complementary institutions; a broader assessment of housing needs more generally, and their provision, can be found in a number of reports produced by the Human Settlements Division of the UNECE.

II. The housing market before and during the transition

A. Housing before the transition

The history of the housing market in central and eastern Europe and the CIS is very different from that of typical market economies. Moreover, among the formerly planned economies, a variety of institutional arrangements existed resulting from their different economic orientations and levels of

---

* The authors can be contacted at jose.palacin@unece.org (4122 917 1643) or robert.shelburne@unece.org (4122 917 2484). We would like to thank Ralph Heinrich and Abdur Chowdhury and the other members of the Economic Analysis Division for helpful comments. Serguei Malanitchev, Tihomira Dimova and Cecilia Batac provided invaluable assistance in helping to obtain data from the national statistical offices; the assistance of these agencies and the central banks is also greatly appreciated. We are also deeply grateful for the insights and factual information provided by a number of individuals outside the ECE, including among others, Ben Anderson, Dorina Antohi, Tibor Bokor, Thea Favaloro, Livia Figà-Talamanca, Victoria Miles, Raimondas Reginis and Kornel Sarkadi Szabo. Nadine Weber and Oksana Pidufala provided research assistance. Yves Clopt, Felirose Gutierrez, Kris Miller and Jelena Torbica helped in the preparation of the tables and charts, copy-editing and electronic formatting.

1 Henceforth, this region will be referred to as the ECE emerging market economies (EME) or simply as “the region”.

economic development. While the means of production were largely state-owned under socialism, there were three basic patterns of housing ownership that existed simultaneously: state-owned, cooperative and privately owned.

Public housing was the dominant form, especially in the major urban areas[2] of most east European countries, while privately owned dwellings accounted for only 28 per cent of residences in 1990 in east European cities.[3] In a few countries such as Bulgaria and Hungary, owner-occupied housing was prevalent even in the urban areas,[4] but even for privately owned residences there was a strong presence of the state in all related aspects. Moreover, there were significant differences in the recognition of some sort of property rights, the scope for self-construction and the operation of markets for housing services.[5] For example, there were often restrictions that allowed ownership of only one urban residence (and perhaps a holiday home as well), limited the size of residences and regulated prices for their sale. Generally, a household needed some type of government approval for the purchase or sale of a residence. Thus even where private housing existed, this had limited meaning and there really was no housing market as defined by western market norms. Where there was privately owned housing, there was a more developed financial sector for providing credit, although the state-owned banks were firmly part of the socialist economy. Loan approval was automatic for anyone who had obtained the necessary authorization, and long-term housing loans were available at relatively low interest rates.[6] Even for state-owned residences, the occupants often had limited rights, most often associated with ownership. This was especially the case in the Soviet Union where residents had entitlement rights for bequesting both their primary residences and their summer *dachas* (country houses).[7]

Construction, especially of apartments, was undertaken primarily by state enterprises which produced, for example, approximately 55 per cent of the new units built in eastern Europe and 90 per cent in Russia in 1980. Even where there was a sizeable proportion of private ownership of dwellings, the state sector was the largest developer of new properties. For example, in Romania, 75 per cent of housing was privately owned but 93 per cent of new units were produced by the public sector in 1980. In the central European countries, cooperatives were especially significant, accounting for about a quarter of newly built units in 1980, while the share of private developments was particularly large (over 40 per cent of new units) in Albania, Bulgaria, Croatia, Hungary and Slovenia.[8] In the rural areas, there were small, privately owned farms that varied in importance compared with the large, collective farms; the former were particularly widespread in Bulgaria, Poland and Slovenia. These small rural dwellings typically were constructed privately by their owners.

Data on price trends prior to the transition are limited. Apartment rents along with utilities for public housing constituted a relatively small proportion of household income. For example in the 1980s, Russian rents were only about 2.5 per cent of household income compared to an average of 33 per cent in the western market economies; in nominal terms, these rents had remained roughly at levels set in 1928.[9]

---

[2] Most of the EME except the Asian CIS, Poland, the Republic of Moldova, Romania and Slovakia were highly urbanized, especially for their level of development; in most, at least half of the population lived in cities of 100,000 population or more. UNECE, *Human Settlements Trends in Central and Eastern Europe*, 1997.

[3] J. Hegedus, S. Mayo and I. Tosics, "Transition of the housing sector in the east central European countries", *Review of Urban and Regional Development Studies*, Vol. 8, 1996, pp. 101-136.

[4] For example, 25 per cent of East Germans lived in privately owned residences prior to reunification, and over 90 per cent of Bulgarians owned their own residences before the transition. S. Merrill, C. Rabenhorst and P. Sacks, *Assessment of the Mortgage Market in Bulgaria* (Washington, D.C., Urban Institute, 2003).

[5] B. Turner, J. Hegedus and I. Tosics, *The Reform of Housing in Eastern Europe and the Soviet Union* (London, Routledge, 1992).

[6] For instance, the length of a loan was up to 43 years in Poland, 40 years in the Czech Republic, 35 years in Hungary and 25 years in Bulgaria, with interest rates of 2 per cent in Poland, 2.7 per cent in the Czech Republic and 3 per cent in Hungary; UNECE, *Human Settlements Trends in Central and Eastern Europe*, 1997.

[7] D. Jaffee and O. Kaganova, "Real estate markets", in L. Klein and M. Pomer (eds.), *The New Russia: Transition Gone Awry* (Stanford, CA, Stanford University Press, 2001), pp.379-392.

[8] UNECE, *Human Settlements Trends…*, op. cit.

[9] D. Jaffee and O. Kaganova, op. cit.

It is difficult to assess the degree of under- or overinvestment in housing (compared to western standards) during the socialist period, despite the fact that for some countries there was a relatively high ratio of housing expenditure to GDP. At least in the last two decades of the planned economy, there appears to have been underinvestment in that housing construction was often limited to small, standardized, low-quality, prefabricated apartments in pre-cast concrete high-rise buildings (of 5 to 20 stories) in high density zones on the periphery of cities. There were chronic shortages of housing, often with long waiting lists for apartments, and sometimes two or more families had to share an apartment. Relative to population, the housing stock was low throughout the former socialist economies, but it was particularly low in Russia which had only half as many housing units as Sweden.[10] However, comparisons between countries of roughly similar per capita incomes suggest much smaller housing deficits, as the Czech Republic and Hungary had only slightly fewer housing units per capita in 1991 than Portugal, while Bulgaria had substantially more than Turkey. Relative to western norms the amount of urban land reserved for residential use was quite low: approximately 35 per cent in Moscow and St. Petersburg, for example, compared with an average of 65 per cent in cities in market economies.[11] In 1990 in the western Lander of Germany, 72.7 per cent of dwelling units in buildings (excluding residential homes) had been constructed after 1949, compared with only 50.4 per cent in the eastern Lander; the units in the western Lander had more rooms with a larger area.[12] Given the generally long life of housing and the small yearly additions to the housing stock, this legacy of limited and low-quality housing remains a significant factor in understanding present trends in the current housing market.

B. Housing during the transition

With the transition to a market economy, it was natural that the housing stock would transfer to private ownership, since housing does not have the characteristics of a public good and thus does not require government ownership for its efficient production and distribution in a market system.[13] Publicly owned housing in market economies results primarily from distributional concerns that a market-based system may not adequately provide housing to financially weak households. Given these considerations, there were significant differences in the type of housing provision during the transition phase, reflecting a combination of the different departure points and the institutional and policy choices made across the region. Overall variation in economic performance was a powerful factor in shaping the options available. In many of these countries, given the rise in poverty and inequality, there was an initial reluctance to privatize the housing stock for distributional reasons, as a consequence public housing and rent controls remained in place.

However, the most fundamental policy issue in privatizing the housing stock concerned the procedure for its distribution to private hands. There were a number of important considerations that varied significantly by region. Since socialism arrived much later in eastern Europe than in the Soviet Union, there was more emphasis in the former on restitution of properties to their former owners, as many of them were either still alive or were first-generation descendants. In addition, given the shorter period under socialism, the properties had undergone fewer modifications. For the units that had been built under socialism this was less of an issue, but claims on the land remained controversial. Often, the properties could not be returned to their previous owners, and instead some form of financial compensation was provided. In Estonia for instance, in some cases initial ownership of the land was separated from ownership of the housing unit on the land. In order to avoid a large-scale reshuffling of residences and the difficulties of quickly establishing financing mechanisms by simply selling all the public units to the highest bidder, there developed a widely used and more pragmatic approach of either giving the units to their current occupants or selling them to the residents at fairly low prices that did not require significant financial outlays. As a result, the new owners were not initially encumbered by debt.

---

[10] Ibid.

[11] World Bank, *Russia Housing Reform and Privatization: Strategy and Transition Issues* (Washington, D.C.), 1995.

[12] Derived from data of the Federal Statistical Office of Germany, 2005.

[13] However, housing markets may possibly be subject to market failures stemming from the fact that current owners may have more information than the prospective purchasers.

In some cases an intermediate step was introduced, whereby large rental apartment complexes were first transferred from government ownership to collective ownership by the residents, and then with majority approval of the residents the individual units were sold to individual owners (usually the existing tenants).

Privatization of the housing stock proceeded quickly in those countries that had already high rates of private ownership, such as Bulgaria, Hungary, Lithuania, Romania and Slovenia, but it took longer in the Czech Republic, Estonia, Poland and Slovakia. By the early 1990s, there was a tenure structure throughout the transition economies, with very high rates of private-owner occupation. Thus the transition countries were able to move relatively swiftly towards a privatized housing market with high ownership rates without first establishing much of an institutional structure that is normally associated with a private real estate market. These very high rates of owner occupancy have largely been maintained due to a number of factors, including the lack of rental alternatives.[14]

The most notable exception to the general prevalence of homeownership among the new EU members is the Czech Republic, where there is still a large share of public housing. However, this country has a de facto high rate of homeownership, as cooperative members have transfer rights equivalent to homeowners. More generally, the property rights attached to legal occupancy are quite different across countries, resulting in different incentives for the purchase of rented property. Poland, Slovakia and some CIS countries continue to have a fairly large segment of rented housing.[15]

Prices of dwellings rose rapidly during the transition period due to inflation in many of these economies, and with limited opportunities for savings and investment, housing appeared to be one of the few mechanisms for wealth preservation. Nevertheless, there is evidence that housing prices did not keep up with inflation, as falling real incomes, high interest rates and limited financing options constrained purchasing power. Housing price-to-income ratios dropped during the 1990-1994 period; by 1994, the calculated housing price-to-income ratios in eastern Europe varied between 3 and 6,[16] and in Russia between 5 and 20,[17] while in western countries this ratio averaged around 6. Data for Hungary show that housing prices fell significantly in the early 1990s, and continued to fall at a more moderate rate in the middle of the decade.[18] They appear to have suffered a further decline in several of the CIS after the Russian financial crisis.[19]

The fact that rental prices were often controlled and kept low further reduced the demand for owner occupied housing and the supply of privately owned rentals. For those who continued to live in public housing in the early 1990s, rents remained quite low, generally below 5 per cent of income (some even as low as 1 per cent), although utility charges often exceeded 10 per cent of income. In some cases, the fear of escalating rents prompted households to participate in the privatization process, while in others there was a reluctance to acquire ownership in order to avoid the maintenance costs associated with ownership.[20]

During the mid-1990s, transactions remained relatively low due to an underdeveloped housing market and limited availability of housing finance. Even where financing was available, consumers

---

[14] For example, in Russia during the mid-1990s only 2 per cent of the housing stock consisted of privately owned rentals; R. Struyk "The long road to market", in R. Struyk (ed.), *Economic Restructuring of the Former Soviet Bloc: The Case of Housing* (Washington, D.C., Urban Institute, 1996).

[15] The lack of development of the rental market reflects the way in which privatization was carried out but also the presence of rent controls and security of tenure, which restricts investment in this sector.

[16] J. Hegedüs, S. Mayo and I. Tosics, op. cit.

[17] R. Struyk, "The long road to market", op. cit.

[18] J. Hegedüs and E. Várhegyi, "The crisis in housing financing in Hungary in the 1990s", *Urban Studies*, Vol. 37, No. 9, 2000, pp. 1619-1641.

[19] For example, according to the Real Estate Development Network of Armenia [www.redna.com], the price of apartments in Armenia fell by 33-42 per cent (depending on the size, with the largest declines for three-room apartments) between the first half of 1998 and the second half of 1999.

[20] This has been documented by M. Plotinovka, *A Model of Housing Privatization Decision: The Case of Russia*, Regional Economics Applications Laboratory, University of Illinois Discussion Paper 04-T-8, September 2004. Also see UNECE, *Human Settlements Trends in Central and East Europe*, 1997.

were reluctant to borrow owing to the high interest rates that accompanied inflation.[21] Loans were often limited to a small percentage of the house's value, often as low as ten percent.[22] Estimates of turnover vary significantly, from a very low estimate of 1 per cent for existing units in eastern Europe[23] to a higher range of 5 to 9 per cent obtained from a sample of six Russian cities.[24] In time, of course, the need to transfer ownership as people died or chose to move would require a more fully developed, market-oriented real estate market with all its complementary institutions.

On the supply side, the most noticeable trend during the transition was the collapse of residential construction due to a shortage of housing finance and the phase-out of public housing. It is estimated that during the 1990s (especially the early 1990s) output typically fell to only 30-50 per cent of 1980 levels, although this decline varied significantly by region. For example, in Bulgaria housing stock increased by less than 2 per cent between 1990 and 1999,[25] and in the capital, Sofia, the number of new housing units fell from around 16,000 in 1988 to only 1,000 in 1995.[26] In Lithuania, residential construction declined from 22,100 units in 1990 to 3,785 in 2001. Similarly large declines occurred in Bulgaria, Poland, Romania and Slovakia. In Moscow, however, due to municipal-sponsored production, the declines were smaller, and by 2001 output was back to its 1985 level.[27]

Various reasons explain the adverse dynamics of construction. Mechanisms for public funding, which were common in the formerly planned economies, were disrupted and the emerging private sector was unable to fill the gap. At the same time, the initially depressed economic conditions reduced effective demand.[28] One notable exception to this slump in construction and the accompanying shortage was in the eastern Lander of Germany, where a massive building campaign following reunification and significant migration towards the western Lander created very high vacancy rates. For example, by 1998 the vacancy rate in much of the eastern Lander, with the notable exception of Berlin, was over 10 per cent, and in some parts it was even higher than 15 per cent, compared with a 3 per cent vacancy rate which is generally considered "normal".

III. The current housing market

Privatization resulted in a tenure structure with a high proportion of owner occupation, higher than in many west European countries such as France, Germany and the Netherlands, although ownership in these latter countries has been on a long-running upward trend (chart 1).[29] Despite low levels of housing debt, households are now spending a much larger share of their incomes on housing and utilities, albeit generally less than those in western European economies. This is especially true for those purchasing owner-occupied residences. The higher costs of utilities such as water, heating and electricity means that they constitute an increasingly large share of household expenditures (table 1).[30]

---

21 Ibid.

22 J. Hegedüs and E. Várhegyi, op. cit.

23 UNECE, *Human Settlements Trends…*, op. cit.

24 The Russian sample however includes new constructed units that represented 19 to 49 per cent of the sales; O. Kaganova, *Monitoring Indicators of Land and Real Estate Reform in Russian Cities*, Urban Institute and the Institute of Urban Economics (Washington, D.C. and Moscow), 1999.

25 UNECE housing database [w3.unece.org/stat/HumanSettlements.asp].

26 National Center for Urban Development and Housing Policy.

27 J. Hegedus, N. Rogozhina, E. Somogyi, R. Struyk and A. Tumanov, "Potential effects of subsidy programs on housing affordability: the case of Budapest and Moscow", June 2004, mimeo.

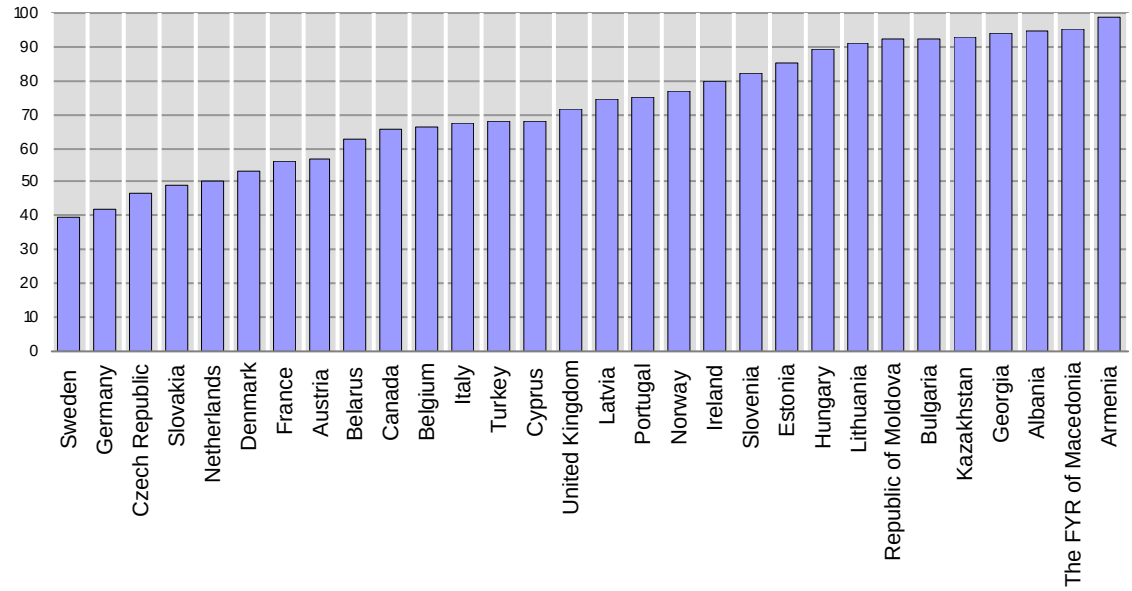
28 In some cases, the uncertainty regarding property rights resulting from restitution programs may have also contributed to paralyze construction activity.

29 There is no single model of tenure in western Europe; in southern Europe homeownership is high, while it remains low in Germany and some other Northern countries.

30 Higher utility payments and the inability to pay for the upkeep of the property were important factors in the decision of poor households to move to cheaper properties, trading down from those obtained during the privatization process. This has led to the emergence of a class of "impoverished homeowners" in some countries. J. Fearn (ed.), *Too Poor to Move, Too Poor to Stay. A Report on Housing in the Czech Republic, Hungary and Serbia*, Open Society Institute (Budapest), 2004.

CHART 1

Households living in owner-occupied accommodation, selected countries
(Per cent)



Source: UNECE, *Housing Statistics Bulletin 2004*.

Note: Most recent available year, as derived from housing censuses and special surveys.

However, since many of the apartment complexes were built without individual metering, collective payment of utilities is still the practice for people living in the complexes, and problems result when some residents are unable to pay their share. In some countries (e.g. Ukraine), utility companies simply charge dwellings a fixed fee, regardless of utilization, often adjusted by the number of residents. Generally, homeowners must now pay for maintenance and repair, which previously had been undertaken by the state; however in some cases, particularly in the CIS, the older privatized units have not been fully "condominiumized", and the government remains responsible for maintenance of the common areas even when the individual apartments are privately owned.[31] Rents have also risen but with large differences across countries.

Small and poor quality units dominate the existing housing stock. The average useful floor area per dwelling and per person is smaller in the emerging market economies of the ECE region than in west European countries. The urban stock is relatively old; however, the age of the existing stock is not always a reliable indicator of quality, as the housing stock produced in earlier periods was often of better quality than the high volume housing produced during the last two decades of socialism. The relative homogeneity of this stock in terms of quality has inhibited movements up the "property ladder" in accordance with the changing circumstances of households through the life cycle. Moreover, the poor quality of some of the existing stock, coupled with insufficient maintenance and the low income of some owners, has resulted in its rapid depreciation. Poor quality is a problem particularly for multi-property high-rise buildings which are deteriorating noticeably due to poor maintenance.[32] In some countries there have been attempts to reverse this trend through the creation of a suitable framework for house maintenance in multi-property dwellings, and implementation of some public support

[31] In most countries in the early transition years, responsibility for the maintenance and repair of public housing was transferred to local governments, but without providing them with the necessary financial resources. Privatization was seen as a way to avoid these expenditures during a period of enormous fiscal constraints.

[32] See the Report for the European Housing Ministers' Conference held in Prague, 14-15 March 2005, *Sustainable Refurbishment of High-Rise Residential Buildings and Restructuring of Surrounding Areas*, for background data and discussion of the main issues in the EU-25 and accession countries. For south-eastern Europe, see D. Iliev and E. Yusel, "A variety of issues at stake: the stock, its management, and its social and economic functions", Council of Europe Development Bank and the World Bank, *Housing in South Eastern Europe: Solving a Puzzle of Challenges* (Paris), 2003.

TABLE 1

Share of housing, water, electricity, gas and other fuels in household expenditure, 1999-2004
(Per cent)

	1999	2000	2001	2002	2003	2004
Armenia	4.1	..	6.7	6.1	7.0	..
Bulgaria	11.2	12.2	12.1	13.6	14.0	13.8
Croatia	32.6	29.7	27.4	29.3	29.2	28.5
Czech Republic	13.6	14.3	14.5	15.5	15.4	15.1
Estonia	17.4	15.2	14.8	15.6	15.7	15.4
Hungary	18.6	17.7	16.9	17.0	17.1	..
Kyrgyzstan	3.8	4.3	4.8	4.9	4.8	..
Latvia	..	..	..	13.0	12.7	..
Lithuania	12.6	13.1	13.2	..	12.3	12.0
Poland	18.4	17.9	18.8	19.9	20.5	20.3
Republic of Moldova	9.3	9.3	10.5	11.7	12.0	12.2
Romania	..	..	9.8	10.7	10.7	10.6
Russian Federation	5.4	5.5	6.5	7.9	9.7	10.1

Source: Direct communications from national statistical agencies.

Note: Imputed rentals are included for Croatia and also for Lithuania (only from 2003). Kyrgyzstan figures refer only to money expenditures.

programmes.[33] Poor quality implies a low degree of marketability and the market value of this type of property is likely to decline as more modern properties are built, providing a wider variety of choices. New residential buildings are of better quality than existing units, with a higher average number of rooms. Overall, new construction appears to be concentrated in the upper segment of the market where buyers have access to mortgage finance.

The economic transition had a significant influence on the geographical distribution of economic activity and population, and thus on regional housing demand. The dynamism of some cities is in sharp contrast with the decline observed in some regions, reflecting different economic specializations and the elimination of mechanisms to support ailing activities. Overall, there has been a continuing trend towards urbanization since the transition. In addition, the potential value of various locations within existing urban centres has been radically altered by the development of new activities. Mechanisms for allocation to competing uses have increasingly reflected market forces, resulting in the gradual emergence of a new urban landscape.[34] These geographical changes in the centres of economic activity create a significant demand for housing in upcoming areas and urban centres while depressing the value of the existing stock in those regions where economic conditions have deteriorated. Thus in some cases there may not be an overall shortage of housing, although the distribution of the existing stock may not correspond to the emerging pattern of geographical demand.

This geographical mismatch has obvious negative implications in terms of labour mobility. The dispersion of housing prices and rents have increased since the transition, but those wanting to move to the more dynamic areas lack sufficient resources unless they are high earners.[35] The sale of an existing residential unit in a depressed area is insufficient to cover the cost of new accommodation in an upcoming area; shortage of accommodation (whether for buying or renting) is an additional constraint facing would-be movers.

The lack of a well developed rental market, especially for low-rent accommodation, further restricts mobility. Privatization reduced the properties available for rental, as tenants became owners. In the Czech Republic, where there is an exceptionally large rental market, de facto rent control has kept prices significantly below the market rate and this has further restricted mobility, as tenants do not want to lose the favourable position tied to existing contracts. Deregulation of rents remains on the

[33] This has had a positive collateral effect in terms of lowering energy consumption, thus reducing the need for subsidies to low-cost families. The share of high-rise dwellings in the total housing stock in the new EU member countries is roughly twice as large as that in existing members.

[34] In the absence of real estate markets, and therefore meaningful prices, in the planned economy construction decisions did not adequately reflect scarcity values.

[35] J. Fidrmuc, "Migration and regional adjustment to asymmetric shocks in transition economies", *Journal of Comparative Economics*, Vol. 32, No. 2, 2000, pp. 230-247.

political agenda, with landlords threatening lawsuits in order to get compensation for lost rent. However, there is an informal rental market in many countries, particularly in the large cities, which escapes the control of the authorities, but the importance of this market is difficult to gauge.

In most countries, rising incomes, new financing mechanisms, and general political and economic stabilization have resulted in a revival of construction in recent years. However, despite the observed surge in activity, it remains well below the pre-transition period, and still compares unfavourably with the pace of activity in faster growing western countries. Self-construction remains significant in many countries, with construction by developers routinely concentrating on the high end of the market.[36] As a consequence of the earlier slump in construction activity, the average age of the dwelling stock has increased. Due to the complexity of housing markets and the need to establish many interrelated institutions, housing appears to be lagging significantly in the economic rebound currently under way in these emerging market economies. Examining the appropriate institutional and financing mechanisms to support construction activity is beyond the scope of this study. However, it is a crucial issue for determining the future dynamics of the housing markets in the region. In the absence of appropriate supply responses, mechanisms that increase effective demand, such as greater availability of mortgages or rising incomes, will translate mainly into higher prices.[37]

IV. The establishment of real estate market institutions

Generally speaking, the institutions that underpin a housing market were largely absent during socialism and have been put in place only gradually. The real estate market involves an extremely complex set of interacting institutions, with a large number of participants from a number of important sectors, including construction, banking, legal, insurance and government. Norms, standards and regulations must be established, and their specifics are highly dependent on the other aspects of the system. More specifically, a residential real estate market requires a land registry, real estate agents, a consumer credit rating agency, property appraisal firms, a banking system capable of offering long-term loans and a judiciary that is able to enforce property rights. In addition, construction and renovation firms are needed for improving the stock. Despite some targeted foreign assistance, the establishment of a viable housing market has taken considerable time to get established, and remains a lagging sector with considerable refinements still needed in many countries of the region. They must also decide on the institutional model they wish to establish, since there are many different ones to be found in the western economies.[38]

The speed with which the required institutional structure has been established has varied significantly. Following German reunification, the eastern Lander rapidly adopted the legal structure prevailing in the western part of the country and in eastern Europe it was possible to partially reconstruct the institutions that had existed before the Second World War, while the CIS had a much more limited history of private real estate to draw upon. This process of creating the needed institutional structure is far from complete in many of the countries, but significant progress has been made. For example, Russia implemented many reforms as recently as 2004, and Ukraine passed legislation authorizing mortgages only in 2003. The absence of the appropriate legal reforms required for a well-functioning mortgage market is not simply an absence by omission due to a market structure

---

[36] In Hungary, construction by companies has accounted for an increasingly large share of total dwellings (37.7 per cent in 2004 against 22.3 per cent in 2001). However, construction by physical persons still represented 57.3 per cent of the total in 2004.

[37] In Russia, housing authorities believe the pick-up in construction has been insufficient. According to the federal building agency, 0.25m^2 per head were built in 2003 and 0.3m^2 in 2004, as against replacement needs of around 1m^2 per head. The construction of new buildings is often financed by developer schemes, where the future owners are required to make large initial payments. This entails substantial financial risks for households and the associated financing costs are high.

[38] As just one example, in recording title deeds the role of the government registrar varies. In the United States, the agency simply records the transactions and takes no responsibility for ensuring the validity of the information provided (with private title insurance providing financial protection); in the European model, on the other hand, the agency takes responsibility for ensuring the accuracy of the information and is held ultimately responsible if a conflicting claim arises. D. Jaffee and O. Kaganova, "Real estate markets", in L. Klein and M. Pomer (eds.), *Rebuilding Russia: A Balanced Approach to Economic Transition*, 2001.

evolving faster than the legislative process. Often, the "needed" reforms require changes to laws that were explicitly created to address other social objectives, and before reforms can be implemented complementary legislation is needed to address these secondary impacts. Thus the creation of the proper legal framework for a mortgage market does not simply mean providing legislation where none existed, but often also involves a restructuring of major components of the existing institutional structure.

Certain schemes are appealing owing to their ability to address initial institutional shortcomings. For example, the lack of appropriate credit rating agencies prompted alternative mechanisms, such as contractual savings accounts, for assessing creditworthiness. These were initially popular in a number of countries in central Europe, particularly in the Czech Republic and Slovakia. Under such a scheme, households make regular deposits that are remunerated at below-market interest rates, with the promise that after a qualifying period they will be able to receive a housing loan, also below market rates.[39] Contractual savings may act as a disciplining device for households, allowing them to accumulate a down payment; they may also provide a way for the banks to obtain information about the creditworthiness of the borrower. In cases where unreported income is potentially large, they may provide evidence of an ability to pay, despite a relatively low declared income. However, given the comparatively low interest rates for these accounts, even relatively low levels of inflation could result in large financing gaps that would limit future purchasing possibilities. These accounts often receive some form of public subsidy. As mortgage markets develop, the importance of these schemes is likely to diminish.[40]

V. Housing finance

In most economies, even the more advanced ones, only a small percentage of people can afford to buy a residential dwelling out of their savings; an appropriate financing system which spreads over time the cost of acquiring what for most households is their main asset is therefore required. An efficient, well-functioning mortgage market is necessary for owner-occupied housing to be affordable and obtainable.[41] Without it, as in many developing countries, property is seldom sold and is passed on from one generation to the next. Moreover, the design of the institutional structure of the mortgage market will have significant economic implications for the stability of the economic system, including the effectiveness of monetary policy and the degree to which households are vulnerable to changing economic circumstances. There is no single model of housing finance that could serve as a reference for the emerging market economies of the ECE. Differences in tax regimes, the degree of competition in the banking system, the development of capital markets and of cultural attitudes, among other factors, have resulted in a variety of systems for the provision of housing finance even in the most developed countries.

A. The growth of housing loans

As revealed in table 2, the ECE emerging market economies have relatively underdeveloped mortgage markets where housings loans relative to GDP[42] are well below the levels observed in western

---

[39] There are two main models. The "closed", German-inspired *Bauspar* model, which is prevalent in the region, provides loans that depend on funding availability. In the "open", French *épargne-logement*, the saver can call the loan on maturity of the contract, independently of the liquidity situation of the scheme. M. Lea and B. Renaud, *Contractual Savings for Housing: How Suitable are they for Transitional Economies?*, World Bank Policy Research Working Paper, No. 1516 (Washington, D.C.), September 1995.

[40] OECD, *Housing Finance in Transition Economies* (Paris), March 2002. This is borne out by the Czech experience: by end 2001, mortgage loans were just 90 per cent of so-called construction savings (i.e. contractual savings accounts), and by end 2004 they were 144 per cent.

[41] For example, a household survey of Russians in 2004 found that only 12.4 per cent believed they could finance their purchase of a home from either savings or personal loans; E. Klepikova and N. Rogozhina, "Residential mortgage lending risk management of affordable housing market development in Russia", 2004, mimeo.

[42] Mortgage lending, understood as a loan secured by the dwelling being purchased, is a narrower concept than housing loans, which have the same purpose but are not necessarily backed by this lien. Available statistics do not always separate these two categories. Before mortgages took off in the region, loans for home purchases were unsecured, had a private guarantor, or were covered by joint finance. The terms and conditions for this type of loan are obviously less favourable than for mortgage financing, which becomes the dominant type of housing loan once it is available. In some cases, this has

TABLE 2

Share of mortgages in GDP, 2001-2004
(Per cent)

	2001	2002	2003	2004
Bulgaria	..	..	1.1	2.7
Croatia	5.9	6.9	8.8	10.3
Czech Republic	1.4	2.1	3.1	4.4
Estonia	5.8	7.9	11.7	16.6
Hungary	2.2	4.7	8.3	9.5
Kazakhstan	0.1	0.2	0.6	1.8
Latvia	..	4.2	7.7	12.1
Lithuania	..	..	3.4	5.6
Poland	1.8	2.6	3.6	4.0
Romania	..	..	1.1	1.4
Russian Federation	..	..	..	0.1
Slovakia	..	..	5.1	6.6
Slovenia	3.3	3.5	3.9	4.4

Source: Central banks' websites and direct communications, UNECE common database.

Note: Croatia, Estonia, Latvia, Lithuania, Poland, Slovakia, Slovenia: the data are for housing loans instead of just mortgages; Czech Republic: in addition to mortgages listed above, there are also housing construction loans (3 per cent of GDP in 2004); Kazakhstan: total housing and construction loans constituted 2.3 per cent of GDP in 2004; Russian Federation: housing loans (including mortgages) were 0.3 per cent of GDP in 2004; Romania: housing loans as of end January 2004 for year 2003; Croatia: housing loans as of end January 2002 for year 2001.

Europe; nevertheless, they have been increasing rapidly in recent years. Only in Estonia and Latvia, and to a lesser extent Hungary, have they reached levels comparable to those found in Greece or Italy, which are at the lower end of the range observed in western Europe.[43] In the Baltic states, rapid growth has continued uninterrupted, despite relatively high levels of housing loans in a context of fast credit expansion. The availability of finance has fuelled increases in housing prices, but these in turn may have fostered the growth of mortgages by increasing the value of the pledged collateral. In Hungary, the growth of mortgages reflects the impact of a generous system of subsidies. In south-east Europe and most CIS countries, mortgage lending began only recently and remains at very low levels. However, the pace of expansion has been notable particularly in Bulgaria, Kazakhstan and Romania.

There are significant differences in the extent of mortgage/housing lending in the countries considered. These are, first, a reflection of the diversity of financial development across these economies, as proxied by the ratio of domestic credit to GDP. There is a clear relationship between the degree of financial development and the relative importance of housing loans. This link is not so strong among the more developed countries, which suggests that the connection may be robust only at lower levels of financial development (chart 2). From a policy point of view, this suggests that addressing the factors that hinder financial development in general could serve to advance the emergence of a housing finance system. The development of mortgage markets is also dependent on institutional developments relating to property rights, well functioning cadastres, and standard and commonly accepted valuation rules. Effective foreclosure procedures in the case of non-payment are a key element for the development of a mortgage market, as they reduce collateral risk and therefore lower costs. In addition, the smooth operation of the system requires a shared understanding of how these various components operate. In the new EU member countries, legal harmonization was an important driver for advancing the legal and institutional requirements of a housing finance system. In the less advanced economies of the region, the provision of housing finance remains particularly small, which indicates the greater institutional shortcomings observed there.[44]

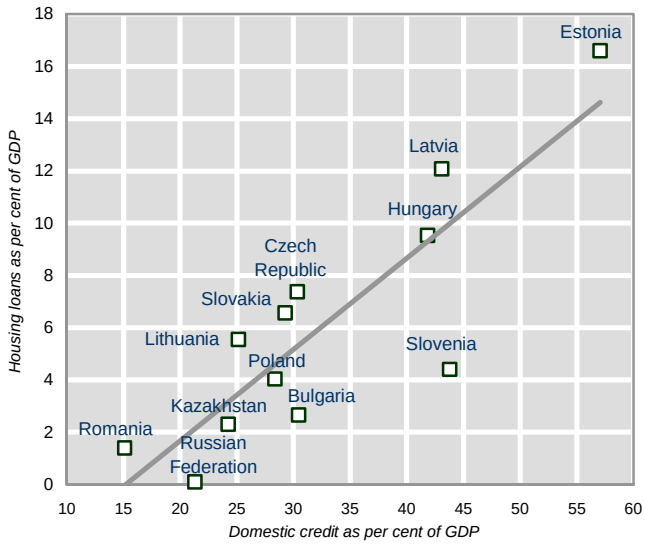
happened surprisingly late. For example, mortgage lending was introduced in Slovenia only in 1997, and because of the difficulties in foreclosure, housing loans with insurance as collateral are still very important. A. Cirman, "Housing finance in Slovenia: the key role of the national housing fund", *Housing Finance International*, Vol. 19, No. 2, December 2004. In some countries, additional guarantees may be required by banks in addition to the security provided by a mortgage. Council of Mortgage Lenders, *International Trends in Housing Tenure and Mortgage Finance* (London), 2004.

[43] With the exception of Spain, where growing real estate prices, tourism demand and migration have resulted in a fast expansion of mortgage lending, high rates of homeownership in southern Europe are accompanied by relatively low mortgage debt to GDP ratios. This reflects both existing family structures (including parents' support for children's purchases) and a less developed system of housing financing (partly due to higher transaction costs); both demand and supply factors may have fed each other. F. Earley, "What explains the differences in homeownership rates in Europe?", *Housing Finance International*, Vol. 19, No. 1, September 2004.

[44] Legal changes are gradually addressing these institutional deficiencies. For example, in late 2004 Russia introduced a package of laws that aimed to facilitate remortgaging of properties, the creation of credit bureaus, the regulation of mortgage default insurance and the issuance of mortgage bonds, among others. V. Mints, "Strategies of transitional

CHART 2

Housing loans and banking development, 2004



Source: As for table 2.

On the other hand, there are also obvious demand factors that have been affecting the growth of housing loans. Growth of incomes has varied significantly and saving capacity remains limited in many cases. Fiscal considerations, including various types of subsidies and tax treatment of interest payments, also play a role in explaining cross-country differences in mortgage lending. The impact of a generous system of public subsidies in Hungary has been particularly notable,[45] while in Estonia, the state agency, Kredex, provides guarantees for housing loans.[46]

The observed variation in the relative importance of housing loans across countries does not appear to be related to differences in tenure structure. This is true also in western markets, where, if the ownership ratio is high, mortgage debt can be either high, as in Norway or the United Kingdom, or low, as in Italy; or if the ownership ratio is low, mortgage debt can be high, as in the Netherlands, or low, as in France.[47] Since the absence of a well-developed mortgage finance system appears to be largely due to these countries' socialist tradition and to their low levels of development, it is somewhat surprising that the most developed mortgage systems among the eight new EU member states from the region are to be found in Estonia and Latvia, since they would appear to score high on these two negative factors. This could be due to the large number of foreign-owned banks and the stability of their exchange rates. Mortgage markets are also underdeveloped in much of Latin America, but Panama, the only dollarized country in Latin American, is also the only country in that region with fixed-rate, 30-year mortgages.

Consumer loans, as opposed to mortgage/housing loans, tend to account for the bulk of household debt in many of the ECE emerging market economies, unlike the situation observed in western Europe

countries to establish a housing finance system – the Russian experience", *Housing Finance International*, Vol. 19, No. 2, December 2004. The development of the mortgage market could play a key role in future housing provision, according to official thinking.

45 Mortgage subsidies throughout the region have benefited mainly middle and upper income groups (i.e. those who were able to fulfil the requirements for a loan). In Hungary, the scheme was introduced in 2001. Nominal interest rates paid by borrowers were fixed at no more than 4 per cent (for new homes) and 6 per cent (for existing homes) for a period of five years. The difference in market rates on the mortgage bonds issued to cover these loans was paid as a subsidy to the banks. The scheme was extended in 2002, just before the elections, to include old apartments. Restrictions were introduced in June 2003 that limit the amount of subsidies, and again in 2004. The subsidies also had a positive impact on the profitability of the banking sector, bringing new customers and reducing their cost sensitiveness. OECD, *Hungary. Economic Survey* (Paris), 2004. It is estimated that around 20 per cent of the net profits of the banking system is derived from the housing loans business; K. Szabó, *OTP, Company Report*, Raiffeisen Centrobank, 14 January 2005. The design of the subsidy sheltered households from the impact of interest rate changes.

46 The guarantee allows some categories to reduce down payments to 10 per cent of the value of the property, instead of the customary 34 per cent. The agency also covers business and export guarantees, but housing accounts for most of its portfolio. In a context of rapid credit growth, the activities of this agency, which account for around one fifth of total mortgages, have been significant [www.kredex.ee]. The statutory limit for the guarantee portfolio was reached in 2004, which reduced growth of the loans provided under this scheme. Eligibility criteria were also narrowed. Mortgage interest rate deductibility criteria have been progressively tightened to contain the growth of credit, with the total amount capped at 50,000 Estonian krooni since January 2005.

47 Norges Bank, *Economic Stability*, 1/2005, p. 16, chart 2.4.

and the more advanced new EU members. However, there has been a sharp and continued increase in the share of housing loans in total household loans, which accounts for most of total debt in the Baltic states, the Czech Republic and Slovakia (table 3). Housing loans generally have been the most dynamic type of borrowing by households. In the new EU member countries, the growth of housing loans in the period 2001-2004 explains most of the observed increase in household debt, in particular in the Baltic states and Poland. In south-east Europe and the CIS, the share of housing loans has been increasing in recent years, but other loans have continued to make a significant contribution to the growth of household debt, which has been increasing rather rapidly in recent years. However, only in Bulgaria has the ratio of household debt to GDP approached the levels found in the new EU member states (table 4).

TABLE 3

Share of housing loans in total household loans, 2001-2004
(Per cent)

	2001	2002	2003	2004
Bulgaria	..	..	16.5	25.0
Croatia	31.3	28.7	30.7	32.8
Czech Republic	57.9	61.7	67.1	71.8
Estonia	65.3	71.4	77.6	80.1
Hungary	29.4	41.7	49.6	48.3
Kazakhstan	..	..	30.7	42.5
Latvia	..	55.0	64.0	66.8
Lithuania	..	..	79.3	77.3
Poland	25.8	32.4	40.8	43.1
Romania	31.3	28.7	30.7	32.8
Russian Federation	..	..	..	8.8
Slovakia	..	..	66.0	68.5
Slovenia	30.0	32.7	34.7	35.6

Source: As for table 2.

TABLE 4

Share of household loans in GDP, 2001-2004
(Per cent)

	2001	2002	2003	2004
Bulgaria	..	..	6.5	10.6
Croatia	18.8	24	28.5	31.5
Czech Republic	5.2	6.5	8.3	10.3
Estonia	8.8	11.1	15.1	20.7
Hungary	7.5	11.3	16.6	19.7
Kazakhstan	0.9	1.6	2.6	5.5
Latvia	..	7.6	12	18.1
Lithuania	..	..	4.3	7.2
Poland	7.1	7.9	8.9	9.4
Russian Federation	..	..	0.4	3.7
Slovakia	..	..	7.8	9.6
Slovenia	11.1	10.8	11.1	12.4

Source: As for table 2.

Given the more demanding institutional, informational, economic, managerial and operational requirements associated with housing loans, and, in particular, mortgage lending, it is understandable that these have been initially lagging behind other types of financing. The absence of well-documented and accurate information regarding the credit history and income profiles of borrowing households is a major hindrance to mortgage lending. Moreover, commercial banks must have adequate sources of funding to be able to respond to the demands for long-term borrowing. Given the long-term nature of housing loans, some degree of macroeconomic stability is also required before lending can take off, as lower inflation and risk premiums are required for a lengthening of the yield curve.

In the initial stages of the development of housing financing, borrowing is largely confined to the more affluent elements of society, who can finance significant down payments and show evidence of regular incomes. However, as competition in the banking sector and institutional reforms result in better financing conditions, and as incomes continue to rise, larger segments of the population will gradually gain access to housing loans.[48] This increase in households' debt and their growing exposure to developments in the housing market will have macroeconomic implications (discussed later in this study).

The fast growth of loans, sometimes accompanied by soaring housing prices (pricing trends will be discussed in a later section), has raised concerns in a number of countries,[49] prompting corrective

[48] Affordability for first-time buyers can be increased more effectively through subsidies that involve help with initial down payments than through reduced interest payments. J. Hegedus, N. Rogozhina, E. Somogyi, R. Struyuk and A. Tumanov, *Potential Effects of Subsidy Programs on Housing Affordability: The Cases of Budapest and Moscow*, USAID, 2004. Upfront cash payments support households that face initial payment constraints (i.e. those with low savings).

[49] In the Baltic states, particularly Estonia and Latvia, the IMF has drawn attention to a possible overheating of the real estate market, and has recommended a tightening of fiscal subsidies and tax advantages to dampen the observed growth. IMF, *Republic of Estonia, 2005 Article IV Consultation Mission Concluding Statement*, 22 July 2005; IMF, *Republic of Latvia, 2005 Article IV Consultation Preliminary Conclusions of the Mission*, 25 April 2005; IMF, *Lithuania, International Monetary Fund Staff Visit Concluding Statement*, 12 July 2005.

policy actions in some cases. A fast expansion of banking loan portfolios could result in a loosening of origination standards and in an underestimation of emerging risks. In Kazakhstan, the overall exposure of the banking sector to the real estate market has increased sharply in recent years, making it more vulnerable to a possible downturn in prices and prompting a discussion on possible measures to reduce the risks associated with this type of lending.[50] In Romania, the central bank introduced regulations to curb the growth of mortgage lending in August 2005, as loans to households have been the main driver of its observed credit boom.[51]

Good macroeconomic policies, resulting in lower inflation and interest rates, may have a more powerful and long-lasting impact on the development of lending than tax incentives and subsidies, which may prove unsustainable. The experience of a number of southern European countries underlines the importance of this factor. In these countries, falling inflation and a declining risk premium in their run-up to membership of the Economic Monetary Union (EMU), brought down interest rates and triggered significant increases in mortgage lending. However, not all the euro-zone countries responded in the same way to the softening of credit constraints.[52]

B. Financing terms and banking competition

On the supply side, the development of a mortgage system has been driven by the banking sector's search for new business opportunities, moving from corporate lending to the untapped potential of retail lending. In most countries, consumer lending took off before housing loans, reflecting the more demanding institutional and operational requirements of the latter.

Increasing competition in the provision of financing for housing, particularly in those countries with more advanced systems, has driven the introduction of new mortgage products and better financing conditions.[53] Typically, repayment terms have been lengthened,[54] loan-to-value ratios have increased, and interest rates have fallen, all of which improve affordability. The ratio of mortgage payments to disposable income is sometimes interpreted generously by lenders on the basis of the existence of non-reported income.[55] The trend towards an easing of financing criteria has been widespread throughout the region, and the rapid change in mortgage terms reflects the evolving degree of development of these markets.

Generally speaking, retail lending, and mortgage loans in particular, remain less competitive market segments than corporate lending, thus attracting higher spreads. However, margins on mortgage loans have been declining. They are typically lower than spreads observed in non-secured consumer lending. Spreads are not only a function of the degree of competition but also a reflection of the higher risks involved when most borrowers do not have a documented credit history.

In most of the CIS, where banking systems are less developed, risk premiums are typically higher, and the short duration of banking liabilities constrains lending possibilities. The bulk of

---

[50] The Financial Supervision Authority estimates that, considering that part of consumers' loans are actually used for housing purchases, real estate loans could constitute around 37 per cent of banks' loan portfolios. IMF, *Republic of Kazakhstan, 2005 Article IV Consultation – Staff Report and Public Information Notice on the Executive Board Discussion*, 2005.

[51] These include minimum down payments (25 per cent of the value of the asset), maximum loan-to-value ratios (75 per cent) and a ceiling on the ratio of monthly payments to household net income of 35 per cent; direct communication from the National Bank of Romania.

[52] Lower interest rates resulted in sharp increases in mortgage lending in Portugal and Spain but not in Italy, which indicates the importance of institutional and cultural factors.

[53] In Hungary, subsidy programmes have had a noticeable impact on the entry of new institutions in the mortgage lending market by increasing expected profitability.

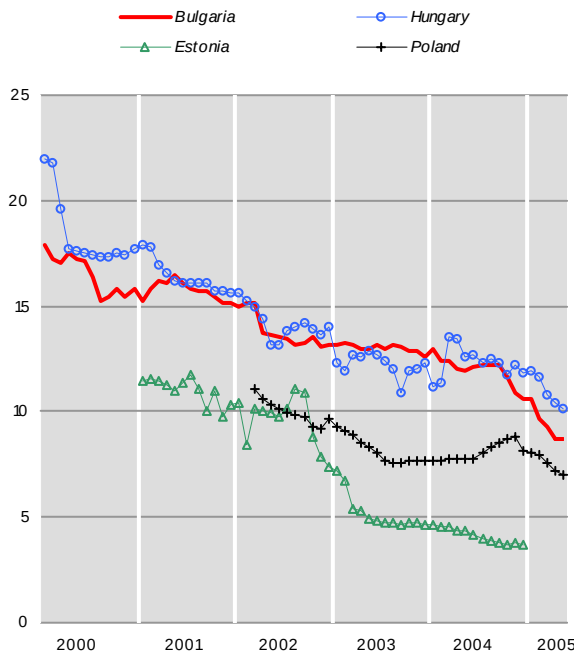
[54] For example, over the last three years, the longest maturity on Romanian mortgages has increased from 10-15 years to 20-25 years, and in Lithuania, it is now possible to get a 40-year loan. P. Morris, "Residential prices climb as boom builds in the Baltics", *Estates News*, Ober-Haus Real Estate Company, April 2005.

[55] However, the uncertainty regarding the true repayment capacity in a situation where unreported incomes may be substantial but impossible to know can be a barrier to the development of the mortgage market, as it becomes more difficult to manage risk and amplifies the effects of the absence of developed credit histories.

housing transactions are financed without the use of mortgages,[56] and where mortgages do exist, they are limited to shorter-term loans. Moreover, effective loan-to-value ratios are smaller and large down payments restrict affordability.

CHART 3

Interest rates on new housing loans, January 2000-May 2005
(National currency)



Source: Central banks' websites.

Lower interest rates have played a significant role in supporting the growth of mortgage lending in the most dynamic markets (chart 3);[57] they increase the affordability of housing and the desirability of borrowing (discussed later). The general decline in interest rates throughout the region reflects lower inflation rates, the increased integration of these countries into the global financial system, a worldwide decline in real interest rates, increased competition in domestic banking, the development of secondary mortgage markets, reduced risk premiums due to improved complementary institutional structures involving credit information and foreclosure rights, and higher expected income growth for retail borrowers. In the new EU member states and accession countries, convergence with EU interest rates has been one of the factors driving the reduction in financing costs. However, it is worth noting that a substantial diversity of financing conditions has survived even within the EMU in terms of the types of products offered, the funding instruments used by the banking sector and, ultimately, the financing costs borne by households.

Finally, interest payments are not the only costs borrowers face; a number of fees and additional payments may also be incurred.[58] In the less developed markets, in particular, the absence of standardization of instruments keeps these additional costs high.

C. Types of mortgages and risks

Mortgages are offered on different terms, including the adjustability of the interest rate, their length and the currency in which are denominated. These differences have implications for the risks associated with a loan and the way in which these are apportioned between borrowers and lenders.

Interest rates on a mortgage loan can be variable or fixed; in most of the ECE emerging market economies the rates are variable (e.g. in the Baltic states and Croatia), or fixed for only a limited period of time. In less developed financial systems, banks depend on short-term deposits to finance long-term loans. This maturity mismatch creates an interest rate risk that must somehow be managed. One approach is to have adjustable rates on long-term loans so that the changes in interest rates required to

[56] According to the Russian Realtor Guild, 3 per cent of all housing deals in 2004 in Russia involved mortgage financing, up from around 1 per cent in 2003. *Vedomosti*, 9 March 2005.

[57] In Estonia, interest margins on housing loans were just slightly higher than those observed in Finland since early 2005. Declining interest rates along with the pick-up in inflation since the second quarter of 2004 have resulted in negative real interest rates. Average nominal interest rates on housing fell by more than 700 basis points (bps) between 2000 and 2004. However, despite falling interest rates, the ratio of interest payments to disposable income has continued to increase, reaching 2.9 per cent in the fourth quarter of 2004. Bank of Estonia, *Financial Stability Review* (Tallinn), May 2005.

[58] These may include banking charges for issuing the loan, notary fees and stamp duty, plus other payments during the life of the loan, including health and property damage insurance.

be paid to depositors can be passed on to the borrowers. Thus, while the risk does not disappear, it is transferred from the bank to the borrowers. From the point of view of the banks, the interest rate risk is replaced by a default risk, since some borrowers may find it more difficult to repay their debts if interest rates increase. Dual index mortgages have been used in some countries (for example in Poland) to counter the negative effects of interest rate variability. With these, the monthly payment owed is calculated on the basis of market interest rates, but the effective payment takes into account the evolution of wages, with the difference being added or deducted from the loan balance. On the other hand, fixed rates, even if they are only for a limited period of time, entail an interest rate risk for the lender, and therefore a premium is required to offset this risk.[59] Another alternative is to obtain longer term financing in capital markets (see box 1); this option is widely adopted in the United States, but less so in the EU (primarily in Germany,[60] Sweden and Austria) where less than 40 per cent of mortgages are financed in the capital markets.[61] Generally, countries with well-developed markets for covered bonds or mortgage-backed securities have a higher percentage of fixed rate mortgages.[62]

While interest risk falls on the borrower or the lender, depending on the design of the loan, prepayment risk is borne exclusively by the bank originating the mortgage. This is true only for fixed rate loans and is asymmetric in character. If households pay their loans ahead of schedule, they deprive the bank of an expected future source of income. Given that there is likely to be a general long-term downward trend in interest rates in many of these countries as their economies stabilize and become more fully integrated into the global capital market, the banking system must be able to manage this risk, since households are likely to seek refinancing at lower rates. Banks can endeavour to protect themselves from this risk in a number of ways: in most European countries, they typically charge large prepayment penalties, while in Denmark (where the main type of mortgage is fixed but callable) and the United States they hedge their risks and package their mortgages into mortgage-backed securities.[63] Either institutional practice or government regulation can set the level of the prepayment penalty. In the United States, owing to a highly competitive housing finance market, prepayment penalties for most loans have been eliminated, but this risk is probably addressed in the form of slightly higher interest rates. Adjustable interest rate loans are another mechanism to limit prepayment risks; if the interest rate on the loan adjusts automatically, there is little reason to refinance a mortgage.

Interest rate premiums remain high in most of the ECE emerging market economies, since the relative infancy of the financial and housing markets constrains the adoption of efficient modelling techniques to deal with the various types of risks. This is because the historical data are insufficient to allow an identification of the underlying parameters covering various aspects of the lending process, including data on early repayments (prepayment risk), default rates (default risk) and the fundamentals driving real estate prices (investment risk).

The levels and types of mortgages available in an economy can influence the effectiveness of monetary policy, the implications of which are explored more fully in section IX below.

---

[59] Borrowers generally have to bear interest rate risks in emerging market economies. In a volatile environment, this may have a negative impact on housing demand. In principle, institutional investors are better equipped to deal with these types of risks. L. Chiquier, O. Hassler and M. Lea, *Mortgage Securities in Emerging Markets*, World Bank Policy Research Working Paper, No. 3370 (Washington, D.C.), August 2004.

[60] However, Germany has specialized mortgage banks that are able to address this problem; J. Osborne, "Housing in the euro area, twelve markets, one money", *Quarterly Bulletin*, Central Bank and Financial Services Authority of Ireland, No. 4, 2005, pp. 87-114.

[61] G. Tumpel-Gugerell, "Capital markets and financial integration in Europe", speech before the European Mortgage Federation Annual Conference (Geneva), November 2004.

[62] IMF, *World Economic Outlook* (Washington, D.C.), September 2004.

[63] The creation of this secondary market also spreads the risk from a bursting of the property bubble out of the banking sector, thus lowering its vulnerability to defaults.

Box 1

Capital markets and mortgage financing

Capital markets can be a source of long-term financing for mortgage lending by complementing retail deposits and helping to reduce the maturity mismatch arising from short-term assets (deposits) and long-tem liabilities (housing loans). Excessive reliance on deposits may be particularly risky if deposit bases are unstable. There are different types of instruments that can be issued to raise resources. Covered bonds (the German *Pfandbriefe*) are popular in Europe, including among the new EU members.[1] The mortgages that provide the collateral for these bonds remain on the balance sheet of the issuing entity, which means there is no outright transfer of the associated risk to the lenders. Another possibility is the issuance of mortgage-backed securities (MBS), where a pool of mortgages is created and the loans are bundled into a security whose interest rate will closely reflect that of the pooled mortgages. Investors in these types of bonds will also have to bear the prepayment risk.[2]

Getting the fundamentals right for the primary mortgage market is a logical prerequisite for the emergence of these new financing options. Once the institutional foundations for the development of a mortgage market are in place, capital markets can provide sources of long-term finance to the banking system. However, this requires some uniformity of documentation, reporting and underwriting standards that will facilitate assessment by investors of the pools of mortgages offered in the market.[3] An appropriate market infrastructure is required to make possible sound pricing procedures, especially for the more complex instruments. On the demand side, the emergence of institutional investors (e.g. pension funds, insurance companies) is needed to provide the necessary demand for these assets. There may also be a positive feedback, as these mortgage instruments can provide the investors with investible assets.

In a number of countries, state agencies have emerged to support the development of a secondary mortgage market, thus overcoming the constraints faced by commercial banks due to the absence of long-term sources of finance. In addition to the direct provision of liquidity and the possible supply of insurance products, they may play a significant role in introducing standards for mortgage products. The adoption of common standards provides the necessary foundation for the development of secondary mortgage markets where mortgages can be traded as commodities, thus attracting liquidity and reducing the costs of funding.[4] A key question in the various schemes of public support is how risk is shared among the various participants (government, public agencies, commercial banks).

---

[1] A covered bond identifies a group of assets (the cover) that represent a collateral attached to the repayment of the bond in the event of bankruptcy. The issuing of mortgage bonds generally carries restrictions on the activity of the issuing party in return for their consideration as privileged investment instruments that commonly benefit from favourable treatment in the legislation that defines prudential investment limits. Given the long maturities involved, investors need these additional benefits (credit enhancements). Covered bonds are particularly well developed in the Czech Republic and Hungary. In the former, the pace of issuance is likely to accelerate in the second half of 2005 (after reaching 70 billion Czech koruny by mid-2005), as the previous tax-exempt status is expected to be discontinued in 2006. The combination of low risk – due to the use of the mortgage as collateral – and tax-free status have resulted in yields that are lower than those from government securities. Future issuance will diminish as a result of the removal of tax advantages and the avalanche of new paper in the second half of 2005. Covered bonds are also important in Poland and Slovakia. Unlike in western Europe, where the credit ratings for covered bonds are higher than those for banks' unsecured debt, maturity mismatch in the cover pool, along with other risks, have constrained this evolution. Fitch IBCA, *Rating Methodology for Polish Covered Bonds* (London), 17 March 2004. Relevant legislation to address this has been adopted or is being considered in most countries in the region.

[2] This risk cannot be eliminated, but it can be redistributed to different bond classes through the issuance of so-called collateralized mortgage obligations.

[3] Covered bonds legislation lays down conditions for the inclusion of mortgages as collateral, including acceptable loan-to-value ratios. In central Europe, this is equal to 60 per cent, with the exception of the Czech Republic and Slovakia, where it is 70 per cent, as in Russia. Only Hungary and Poland limit issuance to specialized banks. MBS are complex securities where proper valuation is difficult and requires significant information, including long time-series on prepayment behaviour.

[4] World Bank, *Developing Residential Mortgage Markets in the Russian Federation*, Final Report, October 2003.

An example of a state agency is the Russian Agency for Housing Mortgage Lending (HLMA) established in 1997, but which only started operations in earnest in 2002. It provides funding for the refinancing of mortgage loans on the basis of a three-tier system involving commercial banks, regional operators and the HLMA.[5] Bonds issued by the HLMA are not yet backed by mortgage securities; rather they are corporate bonds with a state guarantee. However, the maturity of these bonds is typically shorter (around six years) than that of the underlying assets. Rising inflation rates imply that the bonds must be replaced at higher rates when they mature, while falling inflation (and interest) rates increase the likelihood of prepayment and associated income loss. The refinancing activities of the HLMA have been crucial in promoting the development of mortgage markets in the Russian regions (outside Moscow), where it has an uncontested position. Most mortgage lending is denominated in foreign currency, but the HLMA conducts its operations exclusively in roubles.

The Kazakhstan Mortgage Company, which started operating in 2001, works in a similar way, buying off mortgages from partner banks and placing bonds with investors to refinance them. The credit risk remains with the participating banks, which must repurchase the loans in case of default. As in Russia, mortgages granted under this programme must observe certain standards related to its key parameters (e.g. loan-to-value ratios, payment capacity coefficients) and can only be denominated in the national currency.

[5] Commercial banks grant mortgage credits on the terms laid down by the HLMA. A number of regional operators, usually affiliated with local governments buy these mortgages, which are finally repurchased by the HLMA. The regional partners have responsibility for administering the loans and monitoring the collateral. They also bear the risk of default (credit risk), while the prepayment risk is borne by the HLMA.

D. Foreign currency borrowing

Foreign-currency-denominated loans, which are significant in some countries (table 5), have been largely driven by heightened competition in the banking sector. The interest rates on such loans are generally lower and therefore require lower initial monthly payments. Generally, the extent of foreign currency loans can be a general reflection of the degree of dollarization or euroization of the banking system in an economy. In the new members of the EU, euroization expresses their confidence in their planned adoption of the euro, and the desire of households to benefit from the lower interest rates offered on euro-denominated loans. While the preparation for EMU membership mitigates the risks involved in this foreign currency exposure, it is clear that this process will have to unfold without serious problems if the inherent risks are to be avoided.[64] In Slovakia, and particularly the Czech Republic, foreign-currency-denominated loans to households are practically negligible; in most of the other countries in the region, they constitute a more significant share of housing loans (and, when the distinction can be made, an even higher share of mortgage loans) than of overall loans to households. Hungary had also been an exception, as its programme of public subsidies, which underpinned the growth of mortgage lending, applied only to loans in local currency. However, in recent years a more stringent criteria has been established for these subsidies as a way to constrain the program's budgetary implications; and as a result, there has been a significant increase in foreign-currency-denominated lending to households.[65] In Poland, a tight monetary policy to support disinflation,

[64] A currency peg provides an obvious anchor for the choice of currency in lending. In Latvia, the switching of the peg to the euro from the previous special drawing rights (SDR) link in 2005 has resulted in a growing share of the euro in foreign currency lending, which has been supported also by interest rate differentials. However, the dollar still accounts for a sizeable share of the existing stock of mortgage loans.

[65] Strong foreign currency borrowing by households has bolstered the exchange rate, helping to fund a large current-account deficit. The wide gap in interest rates on loans in foreign currency compared to those in the national currency suggests that this trend is likely to continue. As the foreign debt of the government and banks has also increased sharply, this increases their vulnerability to a sharp depreciation in the exchange rate. R. Rözsavölgyi and V. Kovács, "Housing subsidies in Hungary: curse or blessing?", *ECFIN Country Focus*, Vol. 2, No. 18, 2005.

resulting in a strong zloty, underpinned a sustained increase in the share of foreign-currency-denominated loans beginning in 2000. The depreciation of the zloty in 2003 was a catalyst for a reversal of this trend.[66] In countries with a currency board, high levels of foreign-currency-denominated borrowing are understandable, as households are willing to benefit from lower interest rates while being reasonably confident in the stability provided by such a currency regime. However, the share of foreign-currency-denominated lending is higher in Romania than in Bulgaria, suggesting the overwhelming importance of interest spread differentials and the use of the euro as the currency of reference in real estate transactions where inflation has been significant. In the CIS, Kazakhstan stands out for the large share of foreign currency in its housing loans, despite the fact that the gap in interest rates on domestic versus foreign currency loans is currently rather small.

TABLE 5

Household borrowing in foreign currency, by loan type, 2004
(Per cent)

	Total	*Housing*	*Mortgage*
Armenia	74.4	..	..
Bulgaria	10.3	24.0	24.0
Croatia	0.5	..	..
Czech Republic	0.2	0.1	0.2
Estonia	65.1	..	..
Hungary	9.5	7.6	7.6
Kazakhstan	64.4	..	88.5
Latvia	68.9	74.5	..
Poland	29.6	56.6	..
Romania	..	89.2	..
Russian Federation	15.1	32.8	59.8
Slovakia	0.5	–	..
Ukraine	..	..	60+

Source: As for table 2, except Armenian data which are from the Central Bank of Armenia, *Statistical Bulletin,* 2004.

Note: In Croatia, most of the national currency loans are indexed to foreign currency (80.9 in 2003 and 79.0 in 2004).

Although the banking sector appears to have limited its direct vulnerability to currency swings by minimizing its currency mismatches, it is nevertheless vulnerable to risks of default, since household incomes are largely in domestic currency and they do not have a natural hedge against foreign currency exposure. For consumers, a major impetus for taking foreign-currency-denominated loans is their lower interest rates. To the extent that this interest rate differential represents an anticipated currency depreciation that actually occurs, consumers gain no real advantage in terms of their real present value payments. However, in instances where consumers are restricted in the amount of their mortgage loan by standardized payment-to-income ratios (often around 30 per cent), a foreign-currency-denominated loan would allow a consumer to qualify for a larger loan amount.[67] Recently, the Serbian central bank issued a warning about the potential risks that consumers were incurring especially with loans in Swiss francs, which carry lower interest rates but expose consumers to much greater currency risk than domestic and even euro-denominated loans (since the bank attempts to limit movements in the euro-dinar exchange rate).

There are three possible exchange rate developments that may be of particular relevance with regard to foreign-currency-denominated loans in the ECE emerging market economies: the implications of natural resource abundance, the Balassa-Samuelson effect and the possibility of a currency crisis. For natural-resource-rich economies, the real exchange rate generally is positively correlated with the commodity price of its major natural resource export. These countries' real exchange rates therefore do not move in a manner consistent with real purchasing power parity (PPP) considerations. Many of the energy-resource-rich CIS experienced real exchange rate appreciation during 2004-2005 when energy prices soared. However, these real exchange rates depend on real energy prices remaining high; if the energy prices fall so will their exchange rates. Thus it would appear that consumers in natural-resource-rich economies are taking on considerable risks by borrowing in foreign currencies.[68] It is possible that this time energy prices will not fall as they did

[66] Latest figures suggest that foreign-currency-denominated lending is rising again, boosted by an appreciating exchange rate.

[67] The Hungarian experience, after the tightening of the subsidies scheme and the take-off of foreign-currency lending, shows that households were ready to accept exchange rate risk in order to relax credit constraints. G. Kiss and G. Vadas, *The Role of the Housing Market in Monetary Transmission*, MNB Background Studies, No. 3, July 2005.

[68] For example, on a 20-year loan, if the real exchange rate is expected to decline by 10 per cent early in the loan period, a foreign loan would need to have an interest rate of 1.25 to 1.5 percentage points lower in order to be equivalent (ignoring

after the 1973 and 1979 increases since those increases were due to "artificial" supply shocks, while the current increase is due to what might be a more permanent rise in global demand.

It is widely believed that real exchange rates in emerging market economies are likely to appreciate over time due to the Balassa-Samuelson effect, whereby there is an empirical tendency for prices of non-tradables to rise faster than those of tradables due to faster productivity growth in the latter. An emerging market economy is therefore able to maintain a fixed nominal exchange rate with an international currency such as the euro even though it has a higher inflation rate than that prevailing in the euro area overall. In economies with exchange rates fixed against the euro, under competitive banking conditions their real interest rates would be lower relative to the euro zone, even for euro-denominated loans.[69] Thus consumers in the new EU member states are likely to have lower real interest rates than consumers in the EU-15 over the coming decade. However, although nominal interest rates, ideally, should be similar within the euro zone as well as in other economies that are pegged to the euro, different competitive conditions in the banking sector could result in significant differences in nominal interest rates on mortgages.

Finally, borrowers who have taken out foreign currency loans would face a significant increase in their debt relative to income if a currency crisis were to occur; in addition, domestic employment conditions could deteriorate under such circumstances, making it all the more difficult for them to service their loans. In the event of a significant depreciation, liabilities would increase sharply, thus depressing consumption and amplifying the depressive effects of exchange rate weakening on domestic demand.

Given that consumers in many of the emerging market economies are accepting a substantial amount of risk in their choice of adjustable[70] and foreign-currency-denominated loans, it is worth asking whether these are rational choices. Several empirical analyses have sought to examine how consumers choose from among the different types of mortgages based on the type of interest rate on the loan. That research has concluded that, generally, consumers do not seem to be rational in their choice of mortgage options; indeed, they appear to be rather myopic in that they place enormous weight on the size of the initial monthly payments and tend to largely ignore the possible consequences of future interest rate adjustments that will affect the cost of the loan in the long term.[71] Although research has yet to examine consumers' choice of currency denomination for mortgages, it is reasonable to expect similar myopic behaviour in this dimension as well. It has been argued that perhaps the decision about mortgages is so complex, information so costly to obtain, and uncertainty about future life events (for instance, how long they will hold the property) so great, that consumers therefore tend to focus on the loan with the lowest initial costs. This tendency may be reinforced in situations where consumers' demand for a loan is constrained by a bank's loan-to-income limits, as pointed out earlier. The evidence that consumers may not be making the most economically rational mortgage decisions suggests the need for improved information to address this possible market failure, perhaps even requiring regulatory changes to ensure such information is provided. Moreover, if the additional risks posed by foreign-currency-denominated loans entail additional externalities for the maintenance of macroeconomic stability, governments may wish to limit them by increasing their costs through the use of discriminatory tax or subsidy treatment.

---

any tax implications) to a domestic loan. However, in Kazakhstan, where foreign-currency-denominated lending is particularly large, the interest rate differential is rather small.

69 The proper deflator would be domestic prices, not euro-zone prices, since what must be sacrificed in terms of domestic consumption in order to make a mortgage payment will decline at the rate of domestic inflation.

70 Whether an adjustable rate is riskier than a fixed rate depends on the extent to which interest rate changes are due to changing inflation rates and the extent to which an individual's income adjusts to inflation; thus although an adjustable rate is likely to result in more volatility in the amount of nominal monthly payments, in real terms it might result in less volatility.

71 D. Miles, *The UK Mortgage Market: Taking a Long-term View*, HM Treasury (London), 2004; also J. Campbell and J. Cocco, "Household risk management and optimal mortgage choice", *Quarterly Journal of Economics*, Vol. 118, No. 4, 2003, pp. 1449-1494.

VI. Housing price data

Housing price trends are difficult to estimate because, unlike financial assets, houses are extremely heterogeneous and rarely traded, and there is no centralized market for their transactions. The value of a house is most appropriately defined by the value it could fetch under current market conditions. Since the vast majority of homes are not transacted in a given time period, it remains an uncertain and difficult methodological problem to translate recent transaction data into an accurate measure of the value of the overall housing stock. Given the large amount of resources required to collect and analyse housing price information, accurate estimates of the value of the housing stock in the ECE emerging market economies is generally not available even in those countries were transactions are accurately recorded. Although some of the statistical agencies in the region do collect and provide some housing price data, the methodological procedures they use are often not explained and in some cases they provide only price indices and not actual price levels. Estimates of price trends using only non-adjusted average transaction prices suffer from composition biases,[72] especially over shorter time horizons, since different types of housing or housing in different regions or price categories may be overrepresented in the transaction sample during a given period. This may be especially problematic if new and used dwellings are aggregated, as new dwellings are generally of better quality than older properties and may be part of the most dynamic segments of the market. Thus a significant increase in the price of new housing may not reflect the value of the existing housing stock.

As the need for accurate real estate price indices increases, the countries of this region may need to address this problem by constructing indices using a more sophisticated methodology. Generally, this is done by using transaction prices to determine price changes for a certain type of property based on detailed attributes, and assuming that similar properties appreciate at similar rates, an average can then be determined by weighting these price changes by the distribution of housing types in the overall stock of housing.[73] A more sophisticated method is to rely only on repeat sales of a given sample of housing instead of on all transactions. The advantage of using the repeat sales method is that it does not require as much detailed information about the housing stock. Its weakness is that it only uses a portion of the transaction data, since only properties that are sold twice during the sample period are used, and properties that are repeatedly sold may not be typical (for instance, new properties are generally underrepresented in these samples). Also, capital improvements or the overly rapid deterioration of a property may not be adequately taken into account.[74] Another alternative to relying solely on purchase transactions is to also consider appraisals performed for refinancing or taxation purposes; however, these ultimately depend on transaction data. Where transaction data are unavailable, offer prices that are advertised in newspapers, or increasingly on the Internet, provide only limited information and it is uncertain how closely they reflect actual sales prices. Moreover, their use would still require some type of compositional adjustment.

There are a wide variety of ways in which official price data are compiled across the region. The Czech Statistical Office uses information on real estate tax returns to present price information. Indices for each monitored category are derived from weights based on the actual value of transactions. In Hungary, the Central Statistical Office does not deem the available information from

---

[72] In order to determine how the average price of housing is changing, it is necessary to know the value of the whole housing stock, not simply those dwellings that were sold. However, deriving the former from the latter is a difficult statistical exercise. Since there are differences in composition – in terms of such aspects as geographical location, size, quality and age – of the stock and those sold within a given period, average prices for certain types of property based on transactions must be weighted based on the distribution of the stock of housing by similar types.

[73] Even these small methodological differences can make a big difference. For example, in the late 1990s two widely used housing price indices in the United Kingdom, the Nationwide and Halifax indices, suggested annual price changes which differed by over 6 per cent (12 versus 5.6) due to slightly different procedures for dealing with the compositional bias; M. King, "The UK economy and monetary policy", Bank of England, 1998.

[74] Ø. Eitrheim and S. Erlandsen, *House Prices in Norway 1819-1989*, Norges Bank Working Paper 2004/21 (Oslo), November 2004.

tax records on the purchase/sale of dwellings to be sufficiently accurate to be used in aggregate official indicators. The official data reflect the results of surveys conducted in 1999 and 2003, and cover only used housing, with price data based on estimations of value made by the respondents to these surveys. In Kazakhstan, official statistics are compiled on the basis of asking prices in the main regional centres. By contrast, Bulgaria's official data reflect prices on actual transactions of properties with standard characteristics in the district centres where the market is well developed. Russia provides detailed information by types of property, distinguishing between the primary and secondary (used) market. Price data are obtained from organizations operating in the housing market. Indices are compiled for larger territorial aggregates with weights based on completed residential housing in the preceding year and population figures at the beginning of the reference year.

More comprehensive data on housing prices are needed for greater accuracy in determining housing costs in the calculation of future national or EU price indices (of current or future EU members). There remains some disagreement about whether expenditures for owner-occupied housing should be included in a consumer price index (CPI), since housing is both an asset and consumption good. Given the significance of these expenditures for many households in some countries, their exclusion may limit the usefulness of any price index. Fundamentally, the logic of including owner-occupied housing costs depends on the ultimate use of the index. Currently, the EU does not include expenditures for housing (other than utilities and maintenance) by owner-occupied homeowners in its Harmonised Index of Consumer Prices (HICP); only rent is included and this is weighted in the index by the size of the rental market. Thus housing expenditures in countries with a high percentage of households which are owner-occupiers are not given much weight in the price indices. For several countries with a high percentage of owner-occupied dwellings, rent accounts for less than 3 per cent of HICP expenditure. Eurostat and national statistical institutes are currently carrying out a feasibility study of methodologies which could be used to include the costs of owner-occupied housing in price indices, and a decision is expected by 2008 as to whether this should be added to the HICP.[75] The Organisation for Economic Co-operation and Development (OECD) has also examined the degree to which the creation of a more comprehensive price index, by including the user cost of owner-occupied housing, would alter the current HICP inflation rates. It found that inclusion of such costs in 2004 would increase the inflation rate in the euro zone from 2.1 per cent to 2.7 per cent.[76] National governments may also need to examine this issue in their calculation of CPIs.

VII. The dynamics of housing prices in the ECE emerging market economies

Given the limitations discussed above, it is difficult to ascertain price dynamics in most of the emerging market economies of the ECE region. Coverage by official statistics is too recent, patchy, methodologically suspect or simply non-existent. Real estate agents are a source of additional information, but this is generally limited to particular areas, often is based only on asking prices, and suffers from methodological weaknesses such as composition biases. Cross-country comparisons are severely limited due to methodological differences; however comparability of price indices remains an issue even among western countries which have more sophisticated methodologies, not only in cross-country studies but even within countries.[77] These caveats need to be borne in mind to avoid placing an excessive emphasis on price differences across countries.

Table 6 presents recent price information for a number of selected countries and years as provided by official statistical agencies, subject to the limitations discussed above. Some general trends may be

---

[75] "The Harmonized Index of Consumer Prices: concept, properties and experience to date", *ECB Monthly Bulletin*, July 2005, pp. 55-68.

[76] OECD, *Economic Survey of the Euro Area 2005* (Paris), box 2.4.

[77] For example, in the United Kingdom, there are a number of housing price measures available that paint quite a different picture. The ability of a model to explain housing price developments on the basis of economic determinants (thus ruling out possible overvaluation) depends on the index being used. Thus, even for such a mature and developed market, there is some degree of uncertainty about actual price dynamics. D. Egginton, "UK growth prospects and the housing market", Daiwa Institute of Research (London), 2005.

TABLE 6

Growth rates of housing prices per square metre (in national currencies), 2000-2004

	2000	*2001*	*2002*	*2003*	*2004*
Bulgaria	-0.8	0.3	1.8	12.2	47.5
Czech Republic	8.5	21.6	17.9	22.8	..
Estonia	..	..	..	..	..
2 rooms plus kitchen	..	..	..	34.3	35.1
3 rooms plus kitchen	..	..	..	47.1	30.0
Estonia-Tallinn	..	8.4	16.5	28.3	..
Hungary	24.1	24.1	24.1	24.1	..
Kazakhstan	..	..	..	..	..
Primary	..	13.6	55.5	35.1	41.1
Secondary	..	24.8	73.2	38.7	76.2
Latvia-Riga	..	33.3	30.0	4.8	..
Lithuania-Vilnius	..	-1.7	9.3	11.0	..
Poland	..	..	..	..	..
Primary	20.4	7.1	2.5	0.4	6.0
Secondary	9.6	0.6	-4.9	-1.6	5.0
Russian Federation	..	..	..	..	..
Primary	..	21.8	22.4	26.1	27.5
Secondary	..	37.7	27.4	20.9	28.4
Ukraine-Kiev	..	..	76.8	52.7	32.3

Source: Direct communications from national statistical agencies. For Ukraine [www..megakvartal.com].

Note: For Hungary, the reported figures are compounded growth rates, consistent with the increases registered between 1999 and 2003, the only years for which official data were supplied. Figures for Latvia and Lithuania were obtained from *Review of Baltic States Real Estate Market 2003*, prepared jointly by the land authorities of the three Baltic counties. They reflect year-on-year growth in the second half of the year for the capital cities only. The figures for Estonia-Tallinn are from the same source.

identified. Prices seem somewhat volatile, judging by the dynamics of both overall prices and regional differences, but they do not appear to be any more volatile than prices in western housing markets of comparable size.[78] Overall, there has been a general pattern of price increases since 2000, which accelerated beginning in 2004. But there is no evidence of a sustained boom; rather there seems to be an erratic pattern with an upward trend, which is even clearer at the regional level within countries. An exception to this general pattern can be found in Poland, where nominal price declines occurred in 2002 and 2003 for existing housing before resuming growth in 2004. Reported price increases were exceptionally large in Kazakhstan during the period 2002-2004, with average annual increases of 44 per cent for new residences and 63 per cent for existing ones. Bulgaria and Estonia also experienced large price increases in 2004, of 48 per cent and 30-35 per cent respectively. Annual price increases were over 50 per cent in Kiev, Ukraine during 2002 and 2003 based upon data compiled by real estate agencies.

Lending surveys by central banks present additional information on price dynamics for a number of countries, but these are of a qualitative nature. They aim to gauge commercial banks' lending practices and help in their assessment of current and future economic conditions. The questionnaires include a section on housing loans to households, and the responses enable the central banks to monitor lending conditions based on indicators such as changes in the loan-to-value ratio and minimum down payment requirements. The opinions of the senior loan officers regarding past changes and the likely future direction of nominal housing prices are also sought. In Hungary, further price increases were expected in the second half of 2005, although bankers stressed important differences according to the type of housing. In Poland, an improvement in perceptions of the future direction of the housing market was noticeable in the answers provided in the first half of 2005.

It is generally believed that sustained residential price increases cannot occur without liberal financing from the banking sector, since the vast majority of households do not have accumulated

[78] Although housing prices are considerably influenced by macroeconomic variables, even global ones, regional factors also have a major impact on regional prices; the smaller the region the greater the volatility. Since many of these countries are relatively small, a higher degree of volatility would be expected compared to the larger, more developed economies.

TABLE 7

Housing prices per square metre, 2000-2004
(Dollars)

	2000	2001	2002	2003	2004
Bulgaria	150	147	157	211	343
Croatia	1 050	996	1 063	1 278	1 487
Czech Republic	199	193	245	358	..
Estonia	..	..	..	..	..
1 room and kitchen	..	..	415	592	897
2 rooms and kitchen	..	..	421	678	1 008
3 rooms and kitchen	..	..	409	721	1 032
4 rooms and kitchen	..	..	523	714	1 040
Hungary	215	..	..	539	..
Kazakhstan	..	..	..	..	..
Primary market	146	161	240	332	515
Secondary market	54	65	108	153	297
Poland	..	..	..	..	..
Primary market	434	493	507	534	602
Secondary market	347	370	354	365	408
Russian Federation	..	..	..	..	..
Primary market	309	362	413	532	722
Secondary market	234	311	369	455	622

Source: As for table 6.

Note: Prices for Croatia are full construction costs, not transaction or asking prices. Prices for Hungary in the 2000 column are for 1999.

savings to support such increases. The price trends observed are generally consistent with this view. Household loans as a percentage of GDP increased the most (over 4 percentage points of GDP) in those markets experiencing rapid appreciation, i.e. Bulgaria, Estonia, Kazakhstan and Latvia (price data for Latvia for 2004 had not been released at the time of writing this paper). Significant credit growth, and in particular sharp increases in mortgage lending, have been crucial to the strong dynamics of housing prices observed in the Baltic countries. Mortgages as a percentage of GDP were the largest in Estonia and Latvia, where they also experienced the largest increases in 2004. The role of mortgage lending is less clear in Bulgaria and Kazakhstan, given that the size of their mortgage markets is still quite small, although these markets are growing rapidly: lending more than doubled in Bulgaria and tripled in Kazakhstan in 2004 alone. Interest rate subsidies played an important role in fuelling housing demand in Hungary from 2000 onwards, but the tightening of access criteria in early 2004 sharply curtailed the growth of mortgages.

As a way of partially standardizing the price of housing units, especially taking account of size differences, and providing a more comprehensive measure of actual value (as opposed to trend value), a measure of costs per square metre is often used. Based on the limited housing price data available for the region, there does not appear to be a consistently rigorous relationship between the size of a unit and the cost per square metre as it appears to be relatively similar across different sized units. If there is a distinguishable minor tendency, it is for costs per square metre to be higher for the smallest and largest units.

Table 7 presents the prices of dwellings per square metre in United States dollars for countries that supplied pricing data. Although these are expressed in a common currency, cross-sectional comparisons should be made with caution, since there are likely to be significant methodological differences in how the data were derived as well as obvious differences in such aspects as quality, composition (apartments versus houses) and location. Of course, the price trends discussed previously hold, with most of the inflationary effects removed, but it is less clear if pricing these in dollars allows a more fundamental measurement of value or if it introduces its own distortion. Given the sharp swings in the euro/dollar rate and the fact that the reference foreign currency is not the same in all the countries reviewed, the choice of currency may have material implications. Because of insufficient data and differences in methodology, no systematic attempt was made to explain the overall variation in price increases across the countries in the region using fundamental economic factors.

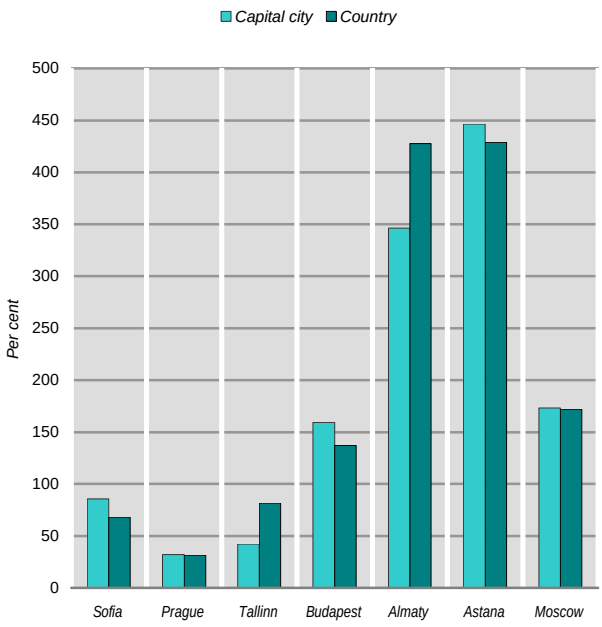
Detailed regional or city price data are available for the Czech Republic, Bulgaria, Kazakhstan and Russia, while less comprehensive information is available for Estonia, Hungary and Poland. As is typical in western economies, housing prices are considerably higher in the large and historic capital cities than in other parts of these countries. For example in Russia, prices in Moscow are triple the unweighted mean of the other regions of the country, while in the Czech Republic, prices in Prague are almost four times higher than the unweighted mean of the rest of the country. During the period 2001-2003, the average purchase price per square metre of family homes (not including multi-dwellings) in municipalities with a population of 50,000 or more was 2,337 Czech koruny, in cities with a population of 10,000-49,999 it was 1,433 Czech koruny, in cities with 2,000-9,999 it was 1,021 Czech koruny and in those with fewer than 2,000 people it was 981Czech koruny.

For the countries where data has been gathered for both the country as a whole and the capital city, there is no evidence that prices in the capitals have been growing faster, with the exception of Sofia and Budapest (see chart 4). In Hungary, there was a distinct tendency for greater price escalation in the larger urban areas: between 1999 and 2003 prices increased by 60 per cent in Budapest, 44 per cent in the county districts, 30 per cent in the towns, and 6 per cent in the villages.[79] Chart 5 shows price trends in the city centres of some capital cities over the 1998-2004 period.[80] The average price for a square metre in the secondary market in Warsaw was between 900 and 1,000 euros, while the price in the city centre was almost 1,650 euros; and there has been very little appreciation since 1999. In Tallinn, Riga and Vilnius, prices in the city centres drifted up slowly between 1998 and 2002 before rising more rapidly in 2003-2004, with the average price per square metre approaching 1,300 euros in 2004 for the latter two cities.

Ideally, it would be desirable to evaluate long-running price trends by comparing more

CHART 4

Growth of housing prices: national and capital cities

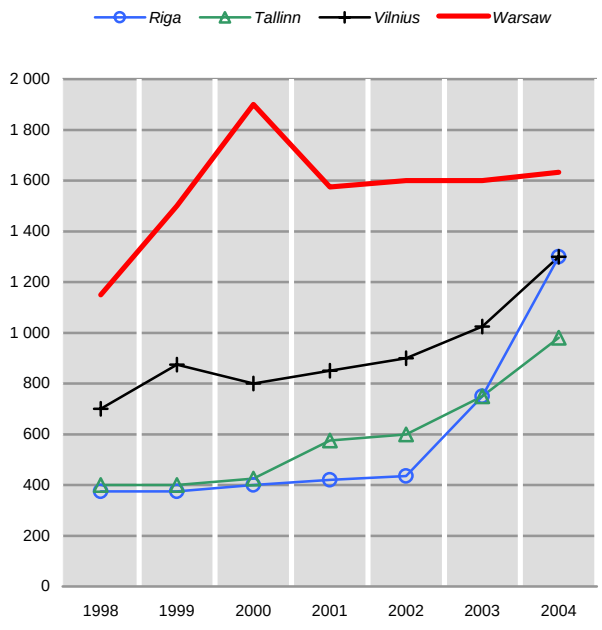


Source: Direct communications from national statistical agencies.

Note: The period covered varies based upon data availability, as indicated in table 6.

CHART 5

Housing prices in city centres, 1998-2004
(Euros/m²)



Source: Ober-Haus real estate company website [www.ober-haus.com].

[79] However, only two data points were available for Hungary. As mentioned earlier, longer time-series are available based on tax returns, but the Central Statistical Office does not consider them reliable enough to be provided as official data.

[80] These data were obtained from the Ober-Haus real estate company, and are estimates from their valuation department based on transactions and their market studies [www.ober-haus.com].

recent data with those previously reported for earlier periods in other studies. For example, it is reported that in 1994 the average transaction price of housing units in the capital cities of Bulgaria and the Baltic countries ranged from $231 to $308 per square metre, of those in central Europe from $409 to $470, while in the Croatian and Slovenian capitals the average price was $1,130.[81] However, any comparison with these earlier data is limited by the absence of a consistent methodology or geographical area across time.

The limited number of years for which pricing data are available makes an empirical analysis of pricing trends within a country difficult; however, some limited empirical analysis was performed on this intra-country regional data to determine the factors that might explain the regional differences in observed price changes. Generally many of the same factors that explain cross-country differences or time-series changes would be expected to explain regional differences; however, variables that traditionally have been found to be significant in explaining cross-country, cross-regional or cross-city price trends generally provided only limited explanatory power in this anlysis. Regional-level data for a number of variables that might be important were generally not available; for example, interest rates, the availability of certain types of mortgages or competition in the banking sector may vary by region due to differences in the level of development or urbanization, but it was not possible to obtain this type of information. An econometric analysis of the factors explaining regional price trends in Russia is provided in box 2. Both population growth and per capita income growth, which have generally been found to be significant in explaining regional pricing trends, were found to be statistically significant in Russia, but had only limited explanatory power for the other countries examined. Nevertheless, on a regional basis, the level of housing prices was generally highly correlated with the level of income or wages in the countries analyzed. In some cases, price growth in tourist resorts may be due to external factors not apparent in the domestic income or population data. A more interesting and unexpected result was the finding that in each of the countries analysed, especially after controlling for the capital cities, there was some degree of regional price convergence (i.e. prices have been growing faster in those regions where they were originally lower). This price convergence in Kazakhstan is shown in chart 6. It is not, however, a general characteristic of housing market price dynamics, and is the opposite, for example, of that found in recent United States regional price trends.[82] Bulgaria was an exception to this trend; the different dynamics observed there may reflect the fact that prices started to grow significantly only in 2003, and particularly in 2004. Regional construction data available for the Czech Republic and Kazakhstan, showed that this variable did not seem, as might be expected, to be significantly related to price changes in housing, but it did appear to be highly correlated with income growth and initial income levels.

In the cases where data was available, there were some small but noticeable trends which differed significantly for the different segments of the housing markets based either on the quality of the units or whether they were new (primary) or used (secondary). In Russia, from the beginning of 2000 to the end of 2004, the average reported price of all new dwelling increased by 244 per cent, while the price of all used units increased by 284 per cent; for typical flats, the increase was 230 per cent for new units compared to 308 per cent for used ones. In terms of quality, a price increase of 268 per cent was observed for low-quality dwellings, 308 per cent for average quality flats, 267 per cent for improved flats, and 201 for elite (high-quality) flats. The price increases for dwellings in Estonia followed a distinct pattern of much larger appreciations for the smaller and “cheaper units”. Between the first quarters of 2002 and 2005, the price of a dwelling comprising one room plus a kitchen increased by 122 per cent, while the price increases for two- to five-room dwellings (plus a kitchen) increased by 103 per cent, 72 per cent, 39 per cent and 28 per cent respectively (from the second quarter of 2002 for five rooms).

---

[81] Metropolitan Research Institute, *Regional Housing Indicators Database in the Transitional Countries of Central and Eastern Europe* (Budapest), 1996.

[82] An analysis of housing prices in the United States using 143 metropolitan statistical areas found a highly significant and positive relationship between their level in 2002 and their increase between 2002 and the first quarter of 2005; data obtained from the National Association of Realtors.

Box 2

Regional housing price trends within Russia

There is substantial variation in housing prices in the 77 regions of Russia examined for this analysis. The price per square metre in 2004 varied from 42,132 roubles (about $1,462) in Moscow to 4,626 roubles (about $160) in Magadan – a factor of 9.1.[1] Between 2000 and 2004, the price per square metre of existing residences in Russia increased by 172 per cent; regionally the price increase varied from 445 per cent in the Republic of Mordovia to 58 per cent in Perm; the increase of 173 per cent in Moscow was almost identical to the country average. Two variables generally found to be important in cross-regional empirical analyses of price dynamics, are income or per capita income growth and population or employment growth. Per capita income by Russian region varies even more than housing prices with a ratio of over 12 between the highest (Moscow) and the poorest (Ingushetia) regions. Between 2000 and 2003 there was an increase in income which varied between 207 per cent and 71 per cent, representing an average increase of 130 per cent. Oil producing regions, where fast income growth has been recorded in recent years, also displayed rapid increases in housing prices. At the same time, there was a significant variation in demographic trends by region from early 2000 to early 2005, ranging between a decline of 27 per cent and an increase of 36 per cent. Although population change proved to be statistically significant in explaining dwelling price changes, an even more significant variable, which captures the same effect, was net migration (or more technically, the percentage of population at the beginning of 2005 due to migration from 1998 through 2003; data for 2004 was not available). This latter variable probably comes closer to accounting for the increased demand for housing units than variations in population due to fertility differences, which would not translate immediately into an increased demand for housing. In some regions, the population would be almost 41 per cent more if there had been no outward migration and in others net inward migration accounted for 27 per cent of the population.[2]

Two additional variables proved to be highly significant in explaining the regional variation in housing prices. During this period (2000-2004) there was a definite trend towards convergence of regional housing prices, with the lower priced regions in 2000 growing more and converging with the higher priced regions. Since the lower priced regions had faster price increases, there was beta convergence, and in addition there was a type of sigma convergence in the sense that the coefficient of variation in regional prices declined from 2000 to 2004.[3] Another variable that proved significant was the initial level of income, independent of the change in income previously discussed. Given the importance of the role of institutional development in housing, especially of the financial sector, we take this variable to proxy the relative level of institutional development of the housing market in the different regions.

More specifically, regional housing price changes were regressed on regional changes in per capita income, migration as a percentage of the population, the initial level of house prices and the initial level of per capita income. All of the variables were statistically significant at the 99 per cent level; however, the regression was only able to explain slightly less than half (41 per cent) of the observed variation in pricing trends.

A similar analysis was performed on the price trends for newly constructed dwellings in Russian regions using a somewhat smaller sample of 61 regions for which data were available. New housing prices increased in the range of 61 to 326 per cent between 2000 and 2004; price trends for new and used housing were highly correlated (Pearson correlation coefficient of .71). Both the initial levels of per capita income and housing prices in 2000 were highly significant (over 99.9 per cent) in explaining these price trends between 2000 and 2004. However, neither changes in income nor changes in population (or net migration) proved to be significant factors in explaining price trends for new housing.

---

[1] This range is fairly close to what is found in the United States; for example, in the second quarter of 2005, the average price in the most expensive metropolitan statistical area (San Francisco) was 9.9 times higher than the lowest (Danville, IL). This data uses 156 metropolitan areas instead of regions, and is by property and not square metre; nevertheless it provides a useful comparison; data from the National Real Estate Association.

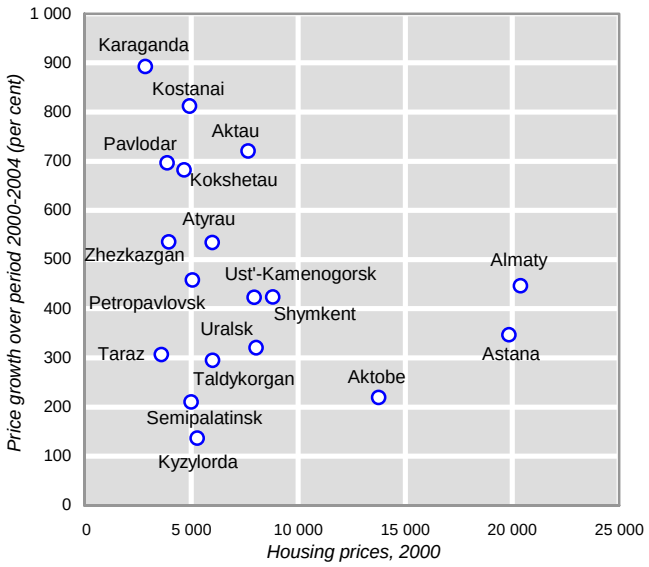
[2] These figures do not consider the children that were or would have been born to migrants or those that died.

[3] If sigma convergence is defined as a decrease in the standard deviation of a sample, then this did not occur; however, given the escalating values, it would seem to make sense to define this concept by a relative measure of dispersion such as the coefficient of variation.

The recent trend of rather significant increases in housing prices in several countries raises the question of affordability. Estimates of changes in affordability are often calculated using a ratio of housing prices to some measure of income. However this ratio fails to take into account the impact of changes in financing conditions on affordability. It is nevertheless useful as a first approximation to interpret the observed changes in prices.[83] As the emphasis is primarily on the dynamics of this ratio, a readily available measure such as GDP per capita can be used. Three groups of countries can be distinguished. In Croatia and Poland, the ratio declined in 2000-2004 (i.e. affordability increased), with this trend in Poland being much clearer for the secondary market. The second group includes the Czech Republic and Russia where there has been a moderate increase in the ratio, though in Russia it has been observed only in the secondary market.

CHART 6

Kazakhstan: convergence of regional housing, 2000-2004



Source: Statistics agency of the Republic of Kazakhstan.

Note: Secondary market prices in KZT per square metre.

Within Russia, regional data on incomes show significant differences in affordability changes during the period 2000-2003; in more than half of the regions for which data were available, the ratio of prices to income declined or remained roughly unchanged.[84] In the third group of countries, more significant increases in the ratio were observed, but with important differences. In Bulgaria, this reflects the jump in prices from 2003 to the second quarter of 2005, compared with the preceding period when the ratio followed a declining trend. In Estonia, intermediate types of properties (those with 2-3 rooms and a kitchen) displayed the largest increase in this ratio. Kazakhstan has also seen consistent increases in the ratio in both the primary and secondary markets. In Hungary, only two years of observations (1999 and 2003) have revealed a noticeable deterioration in affordability. Other measures of income, such a wages, show similar dynamics, as could be expected given the short time span over which the comparison was made. The only noticeable exception is Russia, where wages have grown very fast in recent years and also account for a higher share of GDP. Using national average wages as the denominator of the ratio, there were no changes in affordability in Russia during the period 2002-2003, after having increased in the two preceding years.

A previous analysis of housing affordability in Russia concluded that the ratio of the market price of a standard dwelling (defined as 54m^2) to average household income for a family of three in 2004 was 4.35, which was considered by the authors to be similar to that in western economies.[85] However, since the characteristics of Russian mortgages are less favourable, in that interest rates are significantly higher (even for dollar- or euro-denominated loans) and loan periods are generally shorter, the real cost of a loan, and thus the effective price, is higher. Therefore the degree of affordability may be lower in Russian than what this ratio might suggest. In addition, Russians appear to experience greater difficulty in accumulating savings (due perhaps to limited confidence in the banking system) for a down payment. Another study focusing on Moscow using 2003 data and several different

[83] If the decline in interest rates experienced in recent years throughout the region is considered, an interest rate adjusted measure would suggest less deterioration in affordability than does the simple price to income ratio.

[84] However, it has been argued that in some regions where affordability has deteriorated, the high prices are apparently constraining the demand for mortgages, as borrowers do not have sufficiently large savings to make the initial down payments.

[85] E. Klepikova and N. Rogozhina, op. cit.

affordability measures, found that housing was significantly less affordable there than in the United States, although it was more affordable than in Budapest.[86]

VIII. Potential for a housing bubble and bust

The past decade, especially the last five years, has witnessed a global boom in residential real estate prices, suggesting that a bubble may exist in many housing markets throughout the industrialized world, especially in Australia, Belgium, France, Greece, Ireland, the Netherlands, New Zealand, Spain, the United Kingdom and the United States, but also in some emerging markets such as China, the Republic of Korea and South Africa.[87] Indeed, *The Economist* recently described the worldwide rise in housing prices as the "biggest financial bubble in history".[88] A bubble is best defined as a situation in which existing prices are not explained by fundamentals (such as real income, interest rates or expected rental income), and can only be justified if a further price appreciation is expected. The cause of the present bubble is less well understood, but it is believed to be largely due to the disenchantment of investors with stock markets following the crash in those markets in 2000[89] and the limited response of investment to lower interest rates, which meant that central banks had to push interest rates much lower than if investment had been more responsive. Although media reports provide some anecdotal evidence of a boom in east European property markets, official statistics, as presented in the previous section, suggest significant but more moderate price increases in the region. There are some exceptions though, with housing in several of the countries and in the central locations of many of the capital cities appreciating quite significantly. Given the favourable economic developments in the economies of the region in recent years and expectations of continued prosperity, especially in the new EU members, it becomes more difficult to assess whether these rapid price increases reflect basic fundamentals or have been inflated by "irrational exuberance". Although reliable information is scarce, there is some evidence that prices fell significantly during the early transition period; it is therefore less clear whether the more recent price increases could be simply a rebound from their depressed levels of the earlier period of economic instability.

There have been a large number of analyses on the determinants of real estate prices both cross-sectionally and over time. Over long periods, real prices of housing tend to increase at the rate of per capita income;[90] they increased by an average of close to 1.75 per cent a year during the 1971-2003 period in the industrialized countries. However, there is significant variation between countries: some such as Ireland, Spain and the United Kingdom experienced average yearly increases of over 3.5 per cent, while in others such as Germany and Switzerland they increased by less than 0.5 per cent per

---

[86] J. Hegedus et al., op. cit.

[87] The global extent of the recent increases in housing prices are notable; prices have risen significantly in all the developed economies except Austria, Germany, Japan and Switzerland; in the latter three, inflation-adjusted prices are at almost the same level as in 1970. The slow growth of German prices is thought to be largely due to a huge and excessive supply increase (residential construction investment in the 1990s was significantly greater than in the rest of the euro area) in both east and west in the years after reunification as demonstrated by its current high vacancy rate, and low household formation rates due to the low percentage of individuals in their thirties. The price declines in Japan are the result of its busting property bubble, while the already high prices of real estate in Switzerland limit the room for their further appreciation. Price growth may have already peaked in some markets including Australia and the United Kingdom. The global nature of the current boom seems counter to the popular notion that the three factors governing real estate prices are location, location and location.

[88] "Special report: the global housing boom", *The Economist*, 18 June 2005. Of course not everyone agrees that there is a bubble, see C. Steidmann, "Economist's corner: the housing bubble myth", Deloitte Research [www.deloitte.com].

[89] Although in many of the developed countries returns on investments in housing have exceeded those from stocks over the last five years, over longer periods the returns from stocks have far exceeded those from housing. For example in the United States, the S&P 500 index (including dividends) showed an average return of 12 per cent per annum over the period 1980-2004, while house prices in even the hottest markets such as San Francisco and New York averaged only 7 per cent; M. Rich and D. Leonhardt, "In the long run, sleep at home and invest in the stock market", *New York Times*, 19 August 2005.

[90] An exception to this conclusion can be found in an empirical model using a structural vector autoregression framework, which finds that in the long run income explains less than 10 per cent of price variability; K. Tsatsaronis and H. Zhu, "What drives housing price dynamics: cross-country evidence", *BIS Quarterly Review*, March 2004, pp. 65-78.

annum. More recently, in the euro area residential property has increased by a healthy but moderate 6 to 7 per cent per annum in nominal terms (4 to 5 per cent in real terms) since the beginning of 2000,[91] while United States housing prices appreciated by an average of 8.5 per cent in nominal terms (almost 6 per cent in real terms) from the first quarter of 2000 to the first quarter of 2005.[92] Given that real income growth in the ECE emerging market economies has been and is likely to remain robust for a number of years, it is expected that this factor will continue to exert upward pressure on housing prices.

Although housing has a significant consumption component, it is an asset, and like equities its value is likely to adjust according to revised expectations of future economic prospects. As with other assets whose value is based on forward-looking information, its value is likely to experience sizeable volatility. There would appear to be a reasonable expectation, for both theoretical and empirical reasons, for housing values to grow over the long-term at a rate similar to per capita income growth. Any revision in the expected long-term growth rate of an economy will be reflected in expected future housing values. However, housing prices are unlikely to simply start growing at the higher rate of income growth; as with other assets, the value of housing would be expected to jump significantly as soon as the new expectation is adopted by market participants. In addition, since the supply of housing is essentially fixed in the short run, changes in demand are likely to lead to a situation where prices have a tendency to over- or undershoot in the short run before significant supply adjustments come into play.

A defining characteristic of an emerging market economy is that its equilibrium growth path over the long term is subject to more uncertainty than that of a developed economy. Agents therefore have a tendency to adjust their expectations about the long-term prospects of an economy based upon short-term developments; thus a spurt of economic growth is likely to be translated into expectations of a long-term increase in the growth rate.[93] Consequently, asset prices in emerging market economies whose levels depend on future income levels tend to be subject to greater volatility, as their current levels adjust to changes in expectations. This translates into the general, more volatile macroeconomic environment found in emerging market economies. Since housing is an asset whose future value depends on future income, it would likewise be expected to experience similar volatility. Even in developed economies, where long-term expectations concerning national income are more stable, there is considerable volatility in housing prices. For example in the United Kingdom, annual nominal housing price changes varied between –10 and 30 per cent between 1988 and 2000.[94] In many early-stage emerging market economies, however, there is a counterbalance to this situation in that their financial markets, and especially their mortgage markets, are less developed. This means that their housing prices cannot fluctuate to the degree consistent with changing income expectations because households' liquidity is constrained by the absence of housing finance. Even foreigners, who can play an important role in financial asset bubbles and might wish to participate in the housing market, are constrained by the requirement that mortgage finance must usually be obtained locally.[95] In addition, many countries limit foreign ownership of property, or immigration restrictions limit access.[96] This

---

[91] ECB, "Recent trends in residential property prices in the euro area", *ECB Monthly Bulletin*, May 2005, pp. 34-35.

[92] Office of Federal Housing Enterprise Oversight, "U.S. house prices continue to rise rapidly" (Washington, D.C.), 1 June 2005.

[93] M. Aguiar and G. Gopinath, *Emerging Market Business Cycles: The Cycle is the Trend*, NBER Working Paper, No. 10734 (Cambridge, MA), September 2004.

[94] J. Campbell and J. Cocco, *How Do House Prices Affect Consumption? Evidence from Micro Data*, NBER Working Paper, No. 11534 (Cambridge, MA), August 2005.

[95] Currently, only 1 per cent of Europeans obtain a mortgage in a different country from that where the property is located; these are mostly people living near the border or purchasing second homes; BBC News, 30 August 2005 [www.bbc.co.uk].

[96] Nevertheless, real estate markets are becoming increasingly "globalized" as cross-border transactions have been increasing significantly. In China, another emerging market that has recently privatized housing, the People's Bank of China has concluded that foreigners have played a significant role in the rapid appreciation of real estate in Shanghai and Beijing; they accounted for 23 per cent of all purchases in the last quarter of 2003, and have been especially heavy buyers of high-end properties; R. McGregor, "Beijing warns of property bubble", *Financial Times*, 16 August 2005, p. 2.

factor gives rise to the possibility that there may be a range of middle-income emerging market economies that would be especially likely to experience housing bubble and bust cycles if they are subject to the higher levels of volatility from adjusting expectations and also have financial systems that are sufficiently developed to finance a housing bubble.

Interest rates appear to be another major factor in explaining medium-term price trends; currently, low rates have played an important role in the current global housing boom.[97] In addition to the general impact of financial development, interest rates throughout the region have been falling for three basic reasons: (i) falling inflation (for domestic currency loans), (ii) financial integration with western capital markets, and (iii) the worldwide, decade-long decline in interest rates. Similar factors have been present in some of the southern EU economies that have benefited from the lower interest rates resulting from the creation of the euro. Although the worldwide fall in interest rates may be ending, western Europe's low growth and high savings will contribute to keeping euro rates low, and the first two factors are likely to persist. Although most of the focus is on real interest rates, even lower nominal rates (with a constant real rate) would increase the demand for mortgage loans by lowering monthly payments, which would loosen the income to loan constraint on borrowing; in addition, lower nominal rates would increase the demand for loans by giving the consumer a more desirable payment time profile that is more consistent with maintaining a constant payment to income ratio.[98]

Additional factors that have been isolated as having a significant impact on housing price trends include employment growth and/or household formation and/or population growth, population density, construction costs and levels, unemployment levels, past housing price trends, real household disposable income growth, lagged (but not contemporaneous) real stock prices, credit growth and the existence of a banking crisis.[99] For the countries of eastern and central Europe, most of these variables would seem quite supportive of future price growth.[100] The fairly significant increase in local stock prices is likely to provide some households with additional wealth that they might seek to reallocate to housing although investment in shares is not particularly widespread.[101] Much of the region has also benefited from significant workers' remittances, and these are likely to fuel demand by providing an additional source of financing.[102]

One major negative influence on housing prices concerns demographic trends. Many of the countries in the region (such as the Baltic states, Belarus, Bulgaria, the Czech Republic, Georgia, Hungary, Romania, Russia and Ukraine) are experiencing or are expected to experience low, if not negative, population growth.[103] It has been estimated in western economies that an increase in the population growth rate of one percentage point increases annual real housing prices by 4 per cent.[104] Over a five-year period, in a country with a stable population real housing prices would therefore be

---

[97] Empirical analysis finds that both short-term and long-term rates have a significant influence on housing prices.

[98] Inflation leads to a future nominal increase in income while the payments on a fixed mortgage loan remain constant, thus the ratio of mortgage payment to income falls through time. Ideally, one would expect consumers to prefer a more constant ratio; the lower the nominal interest rate (for a given real rate) the closer becomes the payment profile to the ideal over time.

[99] A recent cross-sectional analysis of housing prices in 18 OECD economies can be found in IMF, "The global house price boom", *World Economic Outlook* (Washington, D.C.), April 2004; a time series analysis of Norwegian house prices is found in D. Jacobsen, "What drives house prices?", *Norges Bank Economic Bulletin* (Oslo), 2005/1, pp. 29-41.

[100] After Spain's accession to the EU, its real housing prices doubled over the subsequent five years; it is not clear if these price increases were due to changing economic fundamentals, a distinct EU effect, or unwarranted speculation. Ireland's real housing prices almost doubled between 1980 and 2000.

[101] Stock prices have increased significantly throughout the area, especially in the new EU member states. The increase in 2004 and the first seven months of 2005 were 57 per cent and 47 per cent for Hungary's BUX, 56 per cent and 31 per cent for the Czech PX-50, 20 per cent for each of the years for Poland's WIG, 81 per cent and 45 per cent for the Slovak SAX, 40 per cent and 22 per cent for the Baltic BALTIX, 101 per cent and 27 per cent for Romania's BET, and 38 per cent and 30 per cent for Bulgaria's SOFIX.

[102] UNECE, *Economic Survey of Europe, 2005 No. 2* (Geneva), chap. 5, pp. 37-50.

[103] The main exception to this general trend can be found in central Asia and Azerbaijan.

[104] IMF, *World Economic Outlook*, 2003 (Washington, D.C.), chap. 2.

expected to grow by 20 per cent less than in a country, such as Ireland, with a population growth rate of around 1 per cent. Thus, in projecting future housing price movements in the ECE emerging market economies, demographic trends will be an important factor. One possibility is that these countries will mimic their western European neighbours and continue to experience low or negative population growth even if rapid economic growth continues;[105] an alternative is that the resumption of economic growth will stimulate population growth, given that, in many cases, especially in the CIS, the low population growth rate since the transition process began has as much to do with the high death rate as the low birth rate. Average household sizes are currently larger than in western Europe, but their declining trend is likely to persist and dampen the depressive effects of the population trends on housing demand. The ageing of the population is also likely to reduce the average household size.

There are also a number of pricing factors that are more country-specific; these include not only the design and development of the mortgage market, as previously discussed, but also real estate taxes and other housing-related transaction costs and subsidies, and the availability of land appropriately zoned for residential use.

A number of methods have been proposed to evaluate whether housing prices are consistent with economic fundamentals. The two most common measures compare such prices with either some measure of personal income or with rents; but there are also more sophisticated econometric approaches. The ratio of housing price to income is examined in the discussion on affordability at the end of section VII. Although trends across countries differ significantly, after accounting for the expected increase in this ratio due to lower interest rates, affordability does not seem to have fallen significantly in recent years. The logic of examining the ratio of housing price to yearly rental value is based on the expectation that there should be some relationship between the price of an asset and the income that can be generated from it. With stocks, this relationship is often expressed as the ratio of asset price to estimated yearly earnings, commonly referred to as the P/E ratio. This ratio is often used to assess whether stock markets are overvalued. In the case of housing prices, generally there is a fairly robust relationship between rents and selling prices. For example, chart 7 shows how average rents in German cities are related to average selling prices of condominiums (medium-quality units). The fact that this price to rent ratio has increased substantially in many western economies is often cited as a reason for suggesting that a bubble has developed in these markets. However, interpreting this ratio is complicated by the fact that, like the housing price to income ratio, it would be expected to increase when interest rates fall as they have.[106] A more general rule of thumb, that incorporates both housing prices and interest rates, is that a property should rent for something relatively close to the monthly payment on a 30-year loan; however, in many western markets this is no longer the case. These types of calculations are more difficult to make for the EME given the limited information available on prices and rents for comparable units, and the limited size of the private rental market.[107] There is, however, a market for buy-to-let properties; according to calculations by local real estate companies, even in the Baltic countries, where house prices have risen considerably, yields from residential property rentals are in the 7 to 10 per cent range,[108] while domestic currency interest rates are generally below these levels and euro rates are significantly below them. These figures suggest that rental income would be sufficient to cover all or most of the mortgage payments and thus, by this measure at least, residential property in these markets would not appear to be currently overvalued.

---

[105] This is the general trend forecast by the Population Division of the Department of Economic and Social Affairs of the United Nations in its *World Population Prospects* (New York), 2003.

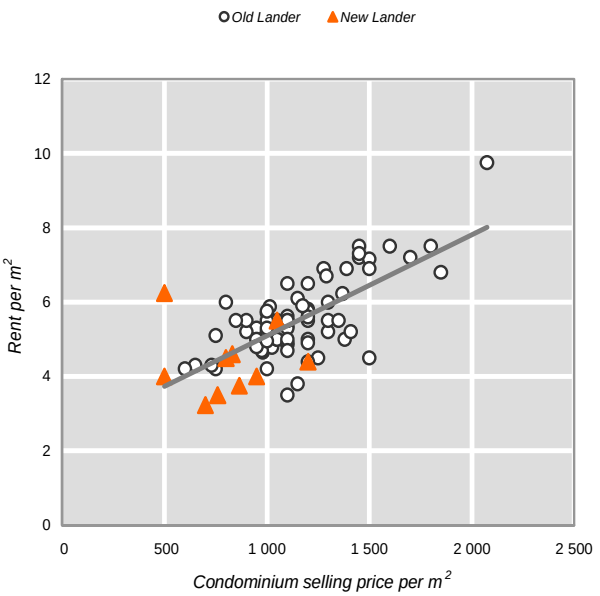
[106] For the euro area, the house price to rent ratio increased by almost 30 per cent between 1996 and the end of 2003, while this ratio increased by almost 60 per cent in Spain and the Netherlands; ECB, *Financial Stability Review*, December 2004.

[107] The private rental market continues to be quite small in many of these countries. Data on rents is generally weighted heavily towards rentals of public housing, and therefore is not an acceptable proxy for this type of analysis. In Bulgaria, rents in the CPI include both the regulated and non-regulated sector. The average annual growth rate of rents paid consistently exceeded the increase in housing prices in 2000-2003 by a large margin, a trend that was only reversed following the sharp increase in housing prices observed in 2004. By contrast, in a number of Estonian cities for which information was available, the ratio of housing prices to rent sharply increased in 2002-2003.

[108] These estimates are provided by the Ober-Haus real estate company for Tallinn, Vilnius, Riga and Warsaw [www.ober-haus.com].

CHART 7

Relationship between sale price and rent of medium-quality units in German cities, 2004



Source: Ring Deutscher Makler Bundesverband e.V., *RDM-Immobilienmarktbericht 2004*, "RDM-Immobilien-preisspiegel 2004" (Berlin), August 2004.

Housing prices seem synchronized amongst the industrialized economies, as they appear to be significantly affected by fundamentals that are global in nature, such as interest rate movements or business cycles, which affect all countries fairly simultaneously. The importance of these global factors for specific country housing markets vary, but since they account for a considerable amount of the variation in housing prices, future price movements in eastern Europe and the CIS are likely to be significantly affected by developments in the housing market in other countries. Despite considerable volatility in housing prices, in the long run they nevertheless tend to revert to values based on the fundamentals. Therefore if housing markets in a number of major economies, including the United States and many western European countries, are overvalued and subject to a bust, this decline could very likely spill over into eastern Europe and the CIS through numerous transmission channels, including interest rates, exchange rates, wealth effects, withdrawal of foreign investment and consumer psychology. However, given that the pricing cycle in eastern Europe started significantly later than in western markets, and that the fundamentals are quite different, this is but one possibility.

According to an IMF analysis, a crash in housing prices is fairly rare; in the western industrialized economies covering the period 1970 to 2003 the probability of a bust was only 5 per cent for a given country in a given year. However, that probability was approximately 40 per cent following a boom; a rapid tightening of monetary policy usually triggers busts. Housing busts generally coincide with recessions, and are often associated with a concurrent equity bust. Moreover, they are often synchronized across countries.[109] The typical price decline in a bust was 27 per cent. Although a housing bust is less frequent than an equity price bust, by lowering GDP by almost 8 per cent, it has a significantly greater impact on the economy and more extensive implications for the banking sector; in addition a housing bust requires a longer time period – almost four years – to work itself out. The longer time period means that more of the real price decline can be achieved through inflation and less through a fall in nominal prices.[110] A severe housing bust lowers consumption expenditures not only for homeowners who lose wealth, but also for owners of mortgage-backed securities; where homeownership is low, housing price declines, by lowering rental costs, can increase the consumption of lower income households. More localized housing busts are often associated with falls in the level of employment. In addition to the economic costs associated with a deflating bubble, resources are misallocated during the boom phase since too much investment is likely to be directed towards new housing.

Currently, there is a debate amongst central bankers, policy makers and academics over the degree to which monetary policy should consider or even target asset prices.[111] Even ignoring the

[109] IMF, *World Economic Outlook*, April 2003, chap. 2 and *World Economic Outlook*, September 2004, chap. 2.

[110] In fact the length of the bust is negatively related to the inflation rate suggesting a significant degree of nominal downward rigidity so that in a low inflation environment it takes a much longer time for real house prices to reach their trough.

[111] Also, it is not clear to what degree property prices affect monetary policy in the euro region, but the European Central Bank's stated position is that "Developments in residential property prices are an important factor in the assessment underlying monetary policy decisions"; *ECB Monthly Bulletin*, May 2005, p. 34.

conceptual question as to whether escalating housing prices should be incorporated into consumer price indices (since they represent a major component of household expenditure) and addressed as an inflation issue, rapid asset price increases and possible economic bubbles may adversely affect financial stability. It has been suggested that loose monetary policy in the late 1990s resulted in the stock market bubble and the global downturn that followed, and that it is currently creating a similar type of bubble in many housing markets. Of particular interest was the Japanese property bubble of the late 1980s and its subsequent crash beginning in 1991, which was followed by a decade-long period of stagnation. This boom–bust cycle is alleged to have resulted from the Japanese central bank's initial neglect of and then possible overreaction to property prices. The price of housing almost tripled during the 1980s and then declined by almost half in the 1990s; commercial real estate and land experienced an even greater boom and a faster and larger bust. Since the banking system financed these real estate transactions, the collapse of property prices led to a banking crisis, as property developers, and to a much lesser degree, homeowners, defaulted on their loans.[112]

Currently, given the limited availability of information on housing market prices and the reduced scope for exercising discretionary monetary policy, central banks in many countries of the region do not seem to have given much weight to housing price developments in their execution of monetary policy. Nevertheless, a recent paper by the Bank for International Settlements (BIS), which includes a case study of the Czech National Bank (CNB), concludes that the CNB "pays close attention to developments in real estate prices" which "have begun to take a central position in the CNB's monetary policy", but its actual importance remains "limited and only indicative".[113] Undoubtedly, the extent to which central banks in the EME begin to consider real estate trends in their conduct of monetary policy will depend on the ongoing debate among developed countries' central banks on how to weigh this factor. Although the European Central Bank (ECB) and the Bank of England have expressed concern about asset bubbles, and seem sympathetic to the idea of using monetary policy to limit them, the current thinking of the United States Federal Reserve (as expressed by both Greenspan and Bernanke) seems to be that it is less costly to "mop up" an asset bust than it is to avoid one altogether by raising interest rates to contain a bubble when that might create additional unemployment.[114] This assessment is based, to a large extent, on the limited costs associated with the last stock market bubble and bust; however, the macroeconomic implications of stock and housing bubbles may be fundamentally different, especially since the latter is generally financed with borrowed money. In addition, real estate markets differ from most other financial markets in that the boom phase cannot be dampened by pessimists, since short trading is not possible. Thus the manner in which booms proceed and unwind may be quite different.[115]

When a property price bubble is part of a general condition of excessive liquidity, a tighter monetary policy might be warranted. However, if the bubble exists in a stagnant economy, or in one where the real estate exposure of the banking sector is limited, the appropriate policy could be one that is more precisely targeted at the property bubble. For example, minimum down payment requirements,[116] where they can be legally regulated, could be raised, or the tax rate on capital gains on housing could be increased. Such regulatory policies could be particularly important in countries with a currency board, since they have little policy discretion over interest rates. However, in the EME information on housing generally is not available in a timely manner,[117] and even in the few countries

---

[112] S. Moffett, "Is Japan's bubble reinflating in the U.S.?", *Wall Street Journal*, 11 July 2005, p. A2.

[113] I. Matalik, M. Skolkova and J. Syrovatka, "Real estate prices and CNB monetary policy", in *Real Estate Indicators and Financial Stability*, Bank for International Settlements, BIS Papers, No. 21, April 2005.

[114] A. Balls, "Greenspan's record: an activist unafraid to depart from the rules", *Financial Times*, 22 August 2005, p. 9.

[115] If "sophisticated investors" consider real estate prices to be low, they might purchase some property, but if prices are too high, there are no easy ways to profit from the situation; this contrasts with financial markets where sophisticated investors can take a short position whenever they believe asset prices are too high. A. Belke and M. Wiedmann, "Boom or bubble in the U.S. real estate market", *Intereconomics*, September/October 2005, pp. 273-284.

[116] For example in the United States, regulation X gives the Federal Reserve the power to regulate required down payments. However, so far the Fed has chosen not to use this as a macroeconomic stabilization tool.

[117] Efforts are under way to improve this situation, especially the significant time lag. In the Czech Republic, for example, there is a project to compile an index based on transactions reported by estate agents, which might include a monitoring

where there has been a systematic effort to gather such information, many shortcomings remain. This constrains the ability of policy makers to take into account housing prices when making policy decisions.

IX. Further economic implications of housing markets

Given the importance of housing, most governments have active policies to shape the structure and direction of residential real estate; indeed, government promotion of the housing market, especially private ownership, has become a key component of the welfare state. Not only is the market important but the rationale for government involvement is that housing creates both positive and negative externalities. Positive externalities include a more stable community, greater citizen involvement in community affairs and better outcomes for children.[118] There is a general belief that these positive externalities dominate, and for that reason government policy in most countries usually provides some form of incentives or subsidies for homeownership. In most of the developed economies, ownership is encouraged through tax benefits of various types. For example, in many countries mortgage interest is deductible or some other form of credit is provided for income taxes, and in the United States property taxes are tax deductible as well; in countries with capital gains taxes, the gains from the sale of homes are often exempt or given more favourable treatment than other assets.[119]

Recently, however, it has been argued that homeownership has negative social externalities in that it acts as a barrier to geographical labour mobility due to the large transaction costs of housing turnover. In addition, areas with high unemployment, from where outmigration might be socially desirable, also often experience a fall in property values so that departing residents would default on their mortgages if they were to leave. Empirically, using a cross-sectional analysis of OECD economies, as well as regions within some countries such as France, Italy, Sweden, Switzerland, the United Kingdom and the United States, there appears to be a correlation between the unemployment rate and the degree of homeownership.[120] This analysis concludes that the natural long-term unemployment rate increases by 1 per cent for each increase of 5 percentage points in the rate of homeownership, although these estimates do raise questions of selectivity bias. An increased unemployment rate of one percent could possibly imply a half-point or more reduction in GDP; thus greater homeownership might entail significant economic costs.

The housing market has important macroeconomic implications for a variety of reasons. Housing prices affect residential investment as well as perceived wealth, and therefore influence consumption expenditures and aggregate demand. By the late 1990s, residential real estate accounted for 25 per cent of aggregate household wealth in the United States and 35 per cent in the United Kingdom,[121] and these figures may be twice as high for middle-income households.[122] In emerging market economies, residences account for an estimated 75-90 per cent of household wealth.[123] The estimated annual

---

of such transactions in the regular set of surveys conducted by the statistical office. The Czech National Bank has played a critical role in driving the demand for better statistics on housing prices. P. Vojtisek, "Monitoring property prices in the Czech Republic", paper presented at the Irving Fisher Committee Conference, *Central Bank Issues Regarding National and Financial Accounts* (Basel), 4-10 September 2004.

[118] D. Aaronson, "A note on the benefits of homeownership", *Journal of Urban Economics*, Vol. 47, 2000, pp. 356-369.

[119] However, in some cases property is subject to taxes not applied to financial assets; for example, property taxes are sometimes considered as a special type of wealth tax.

[120] S. Nickell, "Unemployment: questions and some answers", *The Economic Journal*, Vol. 108 (448), 1998, pp. 802-816; and A. Oswald, "The missing piece of the unemployment puzzle", 1997, mimeo.

[121] Data for the United States are from C. Bertaut and M. Starr-McCluer, "Household portfolios in the United States", and that for the United Kingdom is from J. Banks and S. Tanner, "Household portfolios in the United Kingdom", both in L. Guiso, M. Haliassos and T. Jappelli (eds.), *Household Portfolio* (Cambridge, MA, MIT Press, 2002).

[122] J. Tracy and H. Schneider, "Stocks in the household portfolio: a look back at the 1990s", Federal Reserve Bank of New York, *Current Issues in Economics and Finance*, Vol. 7, No. 4, April 2001, pp. 1-6.

[123] International Finance Corporation, "Housing finance" [www.ifc.org].

marginal propensity to consume as a result of increasing housing wealth is almost twice the effect on consumption as equivalent increases in stock prices; for example in the United States, it is between 3 and 6 per cent. This higher propensity to spend stemming from increased housing wealth seems somewhat surprising, given that it is considerably more difficult to extract liquidity from changes in housing wealth.[124] Although there appears to be a well-established empirical relationship between housing prices and consumption, which seems positively related to the size of the mortgage market,[125] some theoretical questions remain. Some economists argue that a rise in housing prices, although increasing the nominal financial wealth of homeowners, does not actually increase society's real wealth, and should therefore not affect consumption through a wealth channel. The logic of this argument is that housing is also a consumption good, and that a rise in housing prices simultaneously increases the implicit rental costs of housing. Thus homeowners who continue to live in their homes (or any other) are unable to purchase any additional commodities as a result of the price increase, and are therefore no richer in a real sense. In addition, renters or those in starter homes who anticipate purchasing new homes become "poorer" since they will ultimately have to pay more, which would compel them to forgo the consumption of other goods that they might otherwise have purchased.

It is possible that a large number of households are limited in how much they can borrow, and are not able to allocate consumption over their life cycle consistent with their time preferences. In such cases, higher values of housing would enable increased access to additional credit or allow the withdrawal of equity through refinancing. They might also allow households to substitute housing wealth for precautionary savings in financial assets, which would free up income for current consumption. Evidence for these channels comes from household consumption data which show that the consumption effects of increases in housing prices are weaker for households with unused borrowing capacity.[126] Some economists argue that the correlation between housing prices and consumption is spurious, and that both are the result of some other macroeconomic factor. For example, if households become optimistic about future income growth, both consumption and housing prices should increase, the latter as a result of expectations of future income on current asset prices. It has also been suggested that financial liberalization results in more credit, which increases both housing prices and consumption.[127] The ability of increases in housing prices to influence consumption through a number of these channels depends on the existence of a well-developed financial system (for example, a large amount of mortgages that can be refinanced). Given the infancy of this market in most countries of the region, it may be expected that increases in housing prices would have less of an effect on consumption; however, households in the region may be more liquidity constrained than in western markets, in which case the effect would be stronger.

The institutional design of the mortgage market has important implications for housing market volatility and the effectiveness of monetary policy. Fixed-rate mortgages, high turnover costs (including refinancing penalties), conservative loan-to-value requirements and lower rates of home ownership have been found to reduce housing price volatility.[128] The structure of the mortgage market influences the monetary transmission mechanism by altering the way interest rates affect new housing investment, consumer housing demand by altering affordability, and current consumption expenditures by changing mortgage payments for those with flexible rates or refinanced loans, in addition to

---

[124] However, selling financial assets might incur additional taxes on the capital gains, while withdrawal of housing equity by refinancing does not.

[125] P. Catte, N. Girouard, R. Price and C. Andre, *Housing Markets, Wealth and the Business Cycle*, OECD Working Paper, No. 394 (Paris), December 2004. There is, however, significant cross-country variation in this relationship; J. Osborne, "Housing in the euro area – twelve markets, one money", Central Bank and Financial Services Authority of Ireland, *Quarterly Bulletin*, No. 4, 2005, pp. 87-114.

[126] J. Campbell and J. Cocco, *How Do House Prices Affect Consumption? Evidence From Micro Data*, NBER Working Paper, No. 11534 (Cambridge, MA), August 2005.

[127] O. Attanasio and G. Webber, "The aggregate consumption boom of the late 1980s: aggregate implications of microeconomic evidence", *Economic Journal*, Vol. 104, 1994, pp. 1269-1302.

[128] D. Maclennan, J. Muellbauer and M. Stephens, *Asymmetries in Housing and Financial Market Institutions and EMU*, CEPR Discussion Paper, No. 2062 (London), January 1999.

creating housing market wealth effects.[129] This implies that the prevailing type of mortgages can significantly affect the speed and degree to which lower interest rates result in higher consumption and investment expenditures. For example, if refinancing of fixed-rate loans is limited by prepayment penalties, lower interest rates will provide a much lower stimulus to consumer spending; likewise the more adjustable the interest rate, the faster and larger the stimulus. Thus, for example, because of differences in the design of the mortgage market, it is generally believed that monetary policy is more effective in the United States than in continental Europe.[130] The preference for refinancing in the United States has also been accompanied by a tendency for homeowners to withdraw equity out of their houses, which creates additional stimulus but could also increase homeowners' vulnerability to price declines.

It has been argued that the "one size fits all" monetary policy of the euro zone will have different effects on each of the members due to significant structural differences in each of their housing markets. Those at the extremes of the institutional spectrum in the euro zone have been advised to harmonize their housing markets towards the centre in order to minimize macroeconomic problems that might arise from either their over- or under-responsiveness to a given monetary policy.[131] Thus the new EU members as well as the candidate countries, all of which are future members of the euro zone, would benefit from ensuring that the design of their housing markets follows a template corresponding to the main tendencies of the older EU members (the EU-15). Currently in the Baltic countries, variable-rate mortgages are dominant, while in the others mortgage arrangements are more in line with those prevailing in existing euro-zone members (i.e. fixed rates with prepayment penalties). The importance of foreign currency lending in a number of countries introduces another difference in the monetary transmission mechanism, and means that exchange rate changes could result in different sized shocks to different economies.

Changes in asset prices, especially real estate prices, are also likely to have significant effects on the fiscal position of a country by altering the amount of revenues collected on capital gains and turnover transactions, in addition to the more general increases in taxes produced by income growth resulting from wealth effects and greater investment. Asset busts, especially large ones, can lead to increased government expenditures if it becomes necessary to bail out the banking sector due to balance sheet problems. These types of expenditures have amounted to over 10 per cent of GDP in some emerging market economies. The overall magnitude of these revenue and expenditure effects can be significant; for instance it has been estimated that 30 to 40 per cent of the fiscal deteriorations experienced by the United Kingdom and Sweden during the early 1990s were due to asset price effects, with real estate price changes playing a particularly important role.[132]

The vulnerability of the household sector to potential shocks has increased as a result of growing indebtedness, which partly reflects real estate purchases. It therefore becomes important to monitor housing prices and developments in this market for a more complete assessment of threats to financial stability. While in most emerging market economies in the ECE region mortgages and overall

---

[129] The rise in housing prices increases households' wealth, allowing them to borrow more against the increased value of this collateral. This credit channel represents a third way through which the dynamics of the housing market affect homeowners' decisions, and can be influenced by changes in monetary policy. K. Aoki, J. Proudman and G. Vlieghe, *House Prices, Consumption and Monetary Policy: A Financial Accelerator Approach*, Bank of England Working Papers, No. 169 (London), 2002.

[130] The design of the United States market is asymmetric. Although there has been a recent increase in adjustable-rate mortgages, between 85 and 90 per cent of the stock of mortgage debt is at fixed rates (ECB, *Financial Stability Review*, June 2005). Thus lower interest rates have a fairly stimulating effect by encouraging refinancing since there are few prepayment penalties. Higher rates, however, have a much lower impact since the stock of debt is not affected.

[131] Structural differences in the housing market are considered a factor that might complicate the United Kingdom's possible participation in EMU; United Kingdom, HM Treasury, *EMU and the Monetary Transmission Mechanism* (London), 2003. Also see D. Maclennan, J. Muellbauer and M. Stephens, *Asymmetries in Housing and Financial Market Institutions and EMU*, CEPR Discussion Paper, No. 2062 (London), January 1999.

[132] F. Eschenbach and L. Schukecht, "Budgetary risks from real estate and stock markets", *Economic Policy*, Issue 39, July 2004, pp. 315-346.

household debt are still relatively small, they have reached levels in some central European and Baltic countries that make the potential impact of variations in exchange and interest rates fairly significant. In Latvia, the central bank identified developments in the real estate market and mortgage lending to households as the most serious sources of potential financial vulnerability for the banking system in both 2003 and 2004.[133] In Estonia, the strong growth of households' financial liabilities, due mainly to borrowing for home purchases, has led to a negative net financial position against the banking sector since the fourth quarter of 2003. The gap between financial assets and liabilities has continued to widen, and household wealth has become increasingly dependent on the dynamics of real estate prices.

Since housing price changes can affect the balance sheet of the banking system, they can also have a significant impact on financial stability. Increases in these prices may affect the rate of inflation – even if such prices are not part of the CPI by affecting consumer expenditures, which can induce prices increases throughout the economy. The flip side of increased consumption due to rising housing prices is reduced savings. This can have negative implications for long-term growth, and might contribute to current account deficits as the country attempts to tap external sources of savings.

X. Conclusions

Housing is undeniably one of the most important sectors in an economy in terms of its direct impact on peoples' lives and on macroeconomic performance. Under central planning, housing construction was generally of a low quality and there was a shortage of dwellings. However, after adjusting for per capita income and distributional considerations, it is less clear if planning produced any significant bias in the production and availability of housing. Although private housing existed in varying degrees under socialism, the complementary institutional structure typical of market economies was largely absent. Because of the complexity of establishing such a structure and the difficult distributional considerations in privatizing the housing stock, the creation of a viable private housing sector lagged during the transition in many of the ECE emerging market economies; the construction of new housing was particularly adversely affected. However, in most of the countries this institutional structure has now been or is close to being established. Nevertheless, due to considerable differences in the history and cultural traditions of these countries, their levels of development and governance structures, there remain wide variations in their housing markets. Of critical importance to a housing market is the establishment of a mortgage industry, and recent legislation and financial innovations in the banking sector have allowed this market to grow considerably in recent years.

Housing is likely to be a significant growth sector in the coming years, as the economic fundamentals of these countries appear to be extremely positive for this sector. They include robust economic growth and much lower financing costs resulting from economic reform and institution building, their integration into world financial markets and the accession of some of them to the EU. The limited availability of housing due to shortages under socialism and to the collapse of construction during the transition are likely to exert an upward pressure on housing prices, while the low quality of many existing dwellings and declining or stable population trends are likely to limit demand for the used housing stock.

Real prices of housing have recently begun to increase, in some cases quite significantly, such as in the Baltic countries and Kazakhstan. Even more recently a few additional countries appear to have joined this housing boom. It is difficult to assess whether these rapid price increases are consistent with economic fundamentals, since the latter have also substantially improved. A housing price boom does not always result in a bust, and even if the latter should occur it need not necessarily result in a financial crisis. A major constraint to assessing the situation is the lack of appropriate data on housing, particularly housing prices, throughout the region. Given the difficulty in analysing price

[133] Stress tests show that even if 20 per cent of the loans were related to real estate activities and housing purchases, the additional capital required to continue to meet the minimum capital required would be equivalent to only 0.2 per cent of the 2004 GDP. Bank of Latvia, *Financial Stability Report,* No. 2 (Riga), 2004.

developments based solely on economic fundamentals and methodological problems in cross-country analyses, countries need to develop price statistics which will be able to contribute to trend analyses. Even where some data are available for transactions or offered prices, these are not generally adjusted for compositional biases in terms of quality, geography or age of the property. As this market develops, especially in terms of households' ability to borrow in order to purchase and/or withdraw equity from their homes, the macroeconomic effects of the housing market will increase. The choices that countries make in the design of their mortgage markets are an important factor in analysing these effects. As time proceeds, problem areas may arise given the unique features of each country's design of its housing market, and these may require additional refinements.

The price dynamics in the housing market, combined with its design structure, have important implications for fiscal and financial stability, and thus the conduct of monetary and fiscal policy. The current escalation in housing prices can generally be expected to improve the fiscal situation, but governments must be prepared for a possible reversal. Although monetary policy must consider trends in the housing sector, it is less clear if policy should attempt to influence price dynamics. Most of the countries in the region have little room for manoeuvre in their conduct of macroeconomic policy due to their commitments for eventual adoption of the euro or for exchange rate management. Thus any attempt to influence housing price trends will need to be addressed through regulatory policies. The significant foreign currency exposure in the mortgage market in some countries could prove problematic if either external or internal developments result in exchange rate instability.